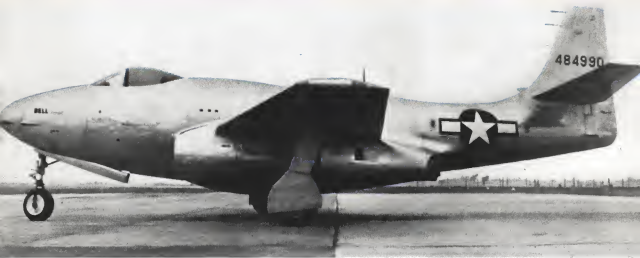


# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

OCT. 29, 1945



**New Jet Fighter:** Bell Aircraft's latest jet fighter for the Army Air Forces is this XP-83, twin-engine craft which is radically different in design and outperforms Bell's earlier P-59 Airacomet, first jet plane built in the United States.

## War Assets Corp. To Handle All Surplus Disposal

New organization free to handle operations without consideration of a variety of other matters as in past set-up; air industry also told of scrapping speed-up.....Page 7

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# Hansen

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## News at Deadline

### Plant Retention

The report of the Interdepartmental Committee on Demobilization of the Aircraft Industry has recommended 10 airframe plants and six engine plants for retention in the 1950 Army-Air Force-Navy Reserve.

On the basis that the aircraft requirements of a future mobilization cannot be met unless a reserve of specialized plant capacity is retained during peacetime for emergency use, the report names War Department-owned airframe plants at Fort Worth, Kansas City, Kansas, Marietta, Ga., Omaha, and Tulsa, and DPC-owned airframe plants at Columbus, Dallas, Louisville, St. Louis and Wichita.

Six engine plants, all DPC-owned, were listed at Chicago, Indianapolis, Kansas City, Mo., Oakland, O., Melrose Park, Ill., and South Bend.

It is proposed that title to the DPC plants be acquired by the War Department or Navy Department. It is anticipated that certain of the plants will be at least partially used for peacetime aircraft production, with plants or portions not so used, to be leased to other industries with restrictive clauses providing for the preservation of their basic structural suitability for wartime and aircraft engine production.

## Martin Reorganizes

A complete new organization designed to meet peaktime demands, create more efficient production and reduce overhead to minimum has been announced by the Glenn L. Martin Co. President Martin announced creation of a new vice-presidency responsible for planning and material, which has been filled by G. T. Willey, former vice-president and general manager of the Martin-Norwalks Co. D. W. Sisson has been named manager of industrial relations and C. E. Crowley personnel director.

Joseph P. Harrison, with Martin since 1935, has resigned as president of the Martin-Nebraska Co., and as vice-president of the parent company. The new division is responsible also for quality control, a department headed by J. P. Butler.

### Industry Observer



✶ **Tiara Aircraft Corp.** this week will take over Aero Industries Technical Institute buildings in Glendale, Cal., for production of non-aviation products. ATI structures cover 5 acres and will house Tiara Industries, Inc. Initial production will be a pilot run of 5,000 vacuum cleaners and a \$1,250,000 order for soft drink vending machines.

► Production and engineering is underway on the B-50, a redesigned B-29, a Boeing Stearman. Features are P&W 4500 Turbo Major engines, wings of lighter metal, lighter-weight landing gear, reverse thrust propellers, new and larger vertical tail surfaces, redesigned ailerons with trim-surface improvements.

Wide Northrup officials have been prohibited by secrecy agreements from commenting on company's XP-73, yet wing under development for more than a year, those familiar with the prime-pilot project expected it to be the company's first supersonic fighter before it crashed recently, killing veteran test pilot Harry Crosby. There is still no indication that the project will be continued and a new model built.

► Consolidated Valmet's new XP-60 fighter has already been flown with a Bell-Royce jet engine and shortly will be equipped with a TG 100 axial flow turbine looked to a propeller. This will probably be the first actual turbo-prop jet in this country.

▶ The two Sikorsky S-55s, boats with which American Export pioneered in North Atlantic commercial services have passed to Navy ownership and the American Airlines subsidiary will stand down on landplanes.

There will be more discussion in the industry soon about the new Chaco-Vaugh Navy fighter, designated the XF101, nicknamed 'The Skimmer'. Designed as probably the most radical current plane design, it has a wing almost circular, with two propellers, one at each wing 'tip'. It is understood to be nearly ready for tests.

P.T.W.A. engineers are studying sketches of several high-speed, high-altitude designs of jet transports. They feel that transport cruising speeds of 500 to 600 mph may be as close as four to five years. Exact operating costs should be lower than present transports, and cruising altitudes of 60,000 to 50,000 feet are expected. For a transport, a trade-off exists between increasing forward speed and increasing altitude. A trade-off exists between increasing altitude and increasing speed. A cruising speed of 550 mph. On a cruise constant flight of 2,500 miles, black-to-black time would be 520 mph. The engineers believe the present trade into higher wing loadings will be reversed when high speed, high-altitude flight is possible with jet transports.

► **Mesaero Mfg. Co.**, aircraft parts maker and former manufacturer of light non-aviation engines, has designed a baby washing machine to sell at less than \$50, weighing about 16 pounds, with several thousand ready for marketing by year end.

► Bell Aircraft delivered over 7,000 aircraft to Russia in the war years or about 60% of all Bell fighters built. From 1942 through 1944 the total was 4,771 P-39s, and in 1944 and 1945 there were 2,636 P-61s. Of these deliveries, 3,180 were flown to Russia.

► Air shipment of 140,000 lbs. of cut flowers a week from Southern California to the East is anticipated by Los Angeles florists now contracting with airlines. Currently, wholesale florists are shipping an average of 28,000 lbs. a week by air, and they report that their present shipments are limited only by cargo space limitations.

► The first experimental scout observation plane to be built by Eds Aircraft Corp., first mentioned here months ago, is more than half completed. The new scout, designated the XDS-1, would implement use of the *Curtiss Seabound*.

# 9 MILLION MILES 4 MILLION GALLONS!

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Robert F. Siv, President of Continental Air Lines, is America's youngest airline president.



### RFC Creates War Assets Corp. To Handle All Surplus Disposal

New organization free to handle operations without consideration of a variety of other matters so in past set-up; air industry also told of speeding up, SPA advisory committee work, prospect of strengthened "normal trade channel" liquidation.

By WILLIAM KROGER

Creation of the War Assets Corp. to handle disposition of surplus property assigned to the Reconstruction Finance Corp. is expected to result in renewed vigor and make possible more direct action in the disposal of more than \$10,000,000,000 in aviation surplus.

Organization of the new government corporation was undertaken by RFC following the dumping of surplus consumer goods, formerly under the Commerce Department, on the already swollen RFC inventory lists. WAC's board of directors will be charged only with surplus disposal, rather than having to concern itself with a variety of other matters, as was true when the RFC board had the final say in surplus policy.

**Smooth Speed**—Informed quarters predict smoother operations and speedier determination of knotty questions when WAC begins functioning Nov. 5.

Also affecting the aviation surplus picture are other developments.

**Revolution** by the Surplus Property Administration of industry advisory committees on air transport and aircraft. Both committees held initial meetings last week, and will hold a joint meeting with SPA officials next week.

**Speeding-up** of sweeping procedures by RFC, details of which are to be announced shortly.

**Increasing** use of "normal channels of trade" by RFC through industry agency agreements, and a firm prospect that an experienced liquidation firm will be called in to administer those agreements in the near future.

**Partial** absorption of the Army-

Navy Liquidation Commissions by the State Department, and plans by the old ANLC to establish an export sales center at Miami.

Key to the latest system is a long series of policy changes on surplus will be the seven-man board of directors of War Assets Corp. Chairman will be Sam H. Hushand, former president of Defense Plant Corp. When aircraft disposal was under DPC, Hushand was a leading figure in the decision not to allow fighters exclusively in the sale of training planes.

Five members of the board will be selected from RFC, the other two from SPA. Suggested as logical SPA representatives are David L. O'Brien, in charge of engine and propeller goods, including

aircraft, and Merritt C. Postleff, chief of passenger goods.

Undecided last week was whether RFC's representatives would be selected from the RFC board—which has been customary procedure in RFC-sponsored corporations—or from among the men presently concerned with disposal. In the latter case, prospects are George F. Buskie, executive director of the RFC Office of Surplus Property—which will give way to WAC—and his associate directors, Col. Frank J. Murphy, for aviation, and Sterling Foster, for capital goods.

A rough tabulation of items to be handled by WAC, according to original cost, is: aircraft, \$4,000,000,000; planes, including aircraft fuselages, \$10,000,000,000; engines and components, \$3,500,000,000; consumer goods, \$3,000,000,000; other capital goods, including tools and communications equipment, \$1,000,000,000—totaling approximately \$27,000,000,000.

One of the trickiest problems involves disposal of engines and components. It is also one of the most important inasmuch as the dollar-value percentage of the engines and components potentially



BRITAIN'S "BOB-TAILED" PLANE:

Hasley-Page's radically designed tailless airplane, named the Mizar, is a turn-engine, pusher propeller type craft with rudders on the wings. The two-place plane cruises at about 150 miles per hour.



**Secret for a Year:** Republic's XP-47 Thunderbolt, which broke all speed records for conventional propeller-driven planes on August 4, 1944, when it surpassed 500 mph. The plane and its record were kept secret by the AAF until last week. The "P" never went into mass production but its salient features were incorporated in later models.

able is larger than that of aircraft, most of which comprises combat types due to be scrapped.

Engines and components, declared surplus, it is estimated, eventually will reach a total of \$3,000,000,000 in original cost. An estimated appraisal is that 30 percent of this will have to be scrapped, with roughly a three percent return on original cost. Of the \$3,000,000,000, 15 percent is readily salable. The balance, 50 percent, is marginal, perhaps can be sold, but probably not for aviation use.

**Agency Agreements**—That the work under the direction of Col. A. E. H. Petrick—now returning to private industry—the engine and components section has instituted "agency agreements," by which private business concerns are permitted to act for RFC in disposing of items with which these concerns were familiar in peacetime. Two types of contracts have been used: cost-plus-fee, and fixed-price, which gives an agent 40 percent of sales cost.

As of last week, there were in effect 17 CPFF agreements—what it is hoped will be replaced by the fixed-fee type—and 15 fixed-fee contracts. About 30 more fixed-fee agreements were in negotiation.

While widespread use of agency agreements will quicken and smooth disposal of engines and components, they create the additional problem of administration of the agreements. RFC is not now staffed to do this job. The solution is in the making is the hiring of the Murray Cook Corp., a non-

profit liquidation concern originally established to handle a similar set-up for the Metals Reserve Corp., which also was sponsored by RFC.

The Cook Corp.'s work for Metals Reserve is tapering off. Rather than use the skilled staff disintegrating, Cal. Petrick has been advocating its use by the engine and components section. Difficulty has been in getting the proposition before the RFC board.

With the formation of War Assets Corp., and its direct attention to surplus disposal, this problem is expected to be resolved.

### Barke Resigns

Thomas Barke has resigned as vice-president of Avonair Report Airframe. Barke joined the airline in 1944 after 10 years in the State Department where he served as chief of international communications.

### Publishing Posts Filled

Lieut. Col. Nathaniel F. Silber and Lieut. Col. Selby Collins have joined the Henry Publishing Co., publishers of Skyways and Airways magazines. Colonel Silber, widely known as an aviation writer, will be technical editor of Skyways and Colonel Collins becomes western editor. Both are members of the Aviation Writers Association and Colonel Silber served during the war as chairman of the AAF Committee on Release of Technical Information.

## 500-Mph. P-47 Disclosed By AAF

Double Wasp powered, spinning experimental C-W prop, plane upset latest high speed theories in secret 1944 test.

An experimental model of Republic's P-47 Thunderbolt, it may now be disclosed, was flown at a speed in excess of 500 miles per hour on Aug. 4, 1944, confirming theories that conventional propeller-powered airplanes could not attain that speed in level flight.

Powered by a Pratt & Whitney R-2800-C Double Wasp engine and driven by a Curtiss-Wright electric experimental propeller, with a special two-inch, hand-welded trailing edge, the XP-47 was the only one in its class to be built.

**Unsettled**—But, Republic engineers say this experimental fighter paid for itself many times over through distinctive features and improvements incorporated into subsequent models of the more than 15,000 Thunderbolts turned out by Republic for the Army Air Forces.

The J-type never went into production because a complete re-tooling program would have been required in the Republic plants and, at that stage of the war, the AAF decided that continued quantity production of the Thunderbolt already being built, with improvements constantly being added, was more important than the extra performance obtainable in the P-47's.

In addition to the Double Wasp engine, the power-plant installation included a General Electric CM-3 turbo-supercharger. This gave the pilot, under emergency conditions, approximately 2,800-hp. at a pressure altitude of 24,000-ft.

**Special Changes**—In outward appearance, the airplane is similar to the early P-47D. However, air intake ducts and engine cooling were redesigned and a propeller driven engine cooling fan incorporated, built like a turbine wheel and driven directly by the propeller. The turbo-supercharger installation was so mounted as to eject exhaust gas directly in the line of flight, thus providing approximately 600-hp. of thrust assistance to the engine.

The record flight was made by Republic test pilot Mike Smith, now an aerodynamicist in Republic's engineering department.

## 'Attack' Against Compressibility Sparks Supersonic Speed Search

New era demands development of theory before practice in contrast to old 'flight first' procedure; industry looks to high-speed wind tunnel tests for data to complete designs.

Recent statements by various manufacturers regarding developmental work on super speed aircraft indicate a frontal assault on the barrier of compressibility.

For reasons best known to themselves the people involved, including Army, Navy, and NACA engineers, are not talking very much about it, but some ideas as to status may be drawn from what little has been said and from German revelations.

**Dark Skies**—Main conclusion is that we still have much to learn before supersonic flight is feasible. Designs now on the boards fairly well represent shots in the dark because fundamental data is still lacking. And, whether surface theory has yet to be developed, in other words, a number of phenomena are observed to exist from wind tunnel experiments which cannot be yet explained.

The problems of supersonic flight is very different from that which confronted early airplane designers and builders. Rate of progress is definitely governed by mathematical prediction of what is required and what will happen at those speeds.

In the subsonic flight era, there were many occasions where satisfactory flight performance was achieved and the theory developed afterwards. "This was because cut and try experimentation was relatively cheap, relatively safe, and the speed of physical reactions was relatively slow. Just the opposite is true in the supersonic era and the fundamental laws of air flow mechanics must be established before aerodynamic forms can even be determined."

NACA Ace—It is generally agreed among engineers that the NACA's John Stack contributed a great deal to the fundamental knowledge in his Eighth Wright Brothers Lecture before the Institute of the Aeronautical Sciences on the subject of "Compressible Flows in Aerodynamics."

They are frankly looking to Stack and his high-speed wind tunnels for the data they need to complete their designs. Of particular interest in Stack's lecture

was the discussion of shock waves and flow separation. Supersonic flow, it seems, is completely linear and any change in direction causes a shock wave. Stack showed, however, that this may not necessarily mean flow separation—which is the real cause of loss of lift and virtually prohibitive increases in drag. Shock waves in themselves are apparently not responsible for important drag increases.

Consensus at this time is that the wing form will have to be very thin for supersonic flight and in profile may be either diamond or airfoil-shaped. Flow direction, transition, and boundary layer control are far more important than pressure distribution—which is the whole story in subsonic flight.

**Structure**—The wing sections pose a formidable problem structurally and also with regard to

storage space for fuel, landing gear, and so on. Just how to get sufficient "body" into such thin forms to withstand what may be terrific aerodynamic loads is causing many a brow to furrow. Some engineers are balking out hopelessly, however, for the possibility that wing sections need not be as thin as presently indicated.

The Germans, who have not been too backward in such matters, seemed to make a good portion of solution in plan form such as sweptback or sweptforward, and did not seem to be too concerned with thinness of sections. Such a comparison is meaningless, however, because they probably were no nearer the answers than we, if as near. It would be a great relief to our structures engineers, if they didn't have to think in terms of razorblades.

Supersonic flight possibilities have been opened up by the advent of jet propulsion. It is felt that such engines can push airplanes into the supersonic range even in this present stage of development. In most engines, they will do so in cruise because the V-2 was a supersonic missile. Ram jet engines (scramjets), however, seem so almost ideal for such work.

Art Silverstein of the NACA's



**CHRYSLER AIRCRAFT ENGINE:**

Little known, generally, during World War II was the fact that Chrysler Corp. had built an aircraft engine for the AAF. The experimental engine, which never went into quantity production, was designated XI-2889-11, rated at 2,594-hp and was designed for the Republic P-47 Thunderbolt. The 16-cylinder inverted engine weighed 2,470-lbs.

aircraft engine research laboratory at Cleveland expressed the belief on the basis of his test data that the new jet would develop the necessary thrust for supersonic flight at efficiencies comparable to piston-engine engines of traveling at a high enough speed, say two or three times the speed of sound. Ram jets seem to have the happy faculty of getting more efficient the faster the speed.

Even so, sound is still setting an excellent and a difficult pace.

## NACA, OSRD

### Research Offices Face Fund Slash

Declaration of aircraft war's work and virtual halt of development organization riding sharp in appropriations legislation.

A declaration in the research program of the National Advisory Committee for Aeronautics and a virtual standard in scientific work by the Office of Scientific Research and Development are rapidly taking form.

The OSRD, headed by Dr. Vannevar Bush, had over \$55,000,000 of its \$69,999,999 slipped

in the first post-war appropriation session bill.

**Salary Ration**—The \$36,000,000 annual appropriation of the NACA was, in effect, cutback \$4,944,000, although NACA was required to return only \$2,960,000 to the Treasury. The remainder of the reduction is being retained by NACA to meet increased salary requirements provided in the recently-enacted federal pay raise bill.

The retention bill, now pending with Senate Appropriations Committee, leaves OSRD with \$18,666,000 for operations until next July, and \$18,940,000 of this has already been committed on programs now underway. This means that OSRD will be able to do little from now until next July except retain its administrative organization.

A "breathing spell" for OSRD was recommended by Budget Director Harold Smith on the grounds that scientists should now "sit back and develop policy," and await the enactment of legislation by Congress establishing an overall research organization.

**Let Down**—NACA's appropriation cutback will mean "some devaluation of effort and some reduction in the intensity of effort," Dr. J. C. Hunsaker, chairman of



#### V-2 TAKES OFF:

A German V-2 speeds upward from the ground at Cuxhaven, Germany, aimed at a target 150 miles away in the North Sea. It was assembled from parts of other smaller rockets fired by the Germans during the war, British technicians made the test to study efficiency of the weapon.

NACA reported to House Appropriations Committee. Anticipating a "let down" in Army and Navy demands for applied research, Hunsaker said, NACA now plans to restrict itself in the main to fundamental research programs, the major of which is experimental research on supersonic-speed aircraft.

#### Waco Joins NASC

The Waco Aircraft Co. has joined the National Aircraft Standards Committee of the Aircraft Industries Association, and becomes the second personal aircraft manufacturer to join the group, Taylorcraft having already joined.

Max P. Belser, Waco assistant chief engineer, has been designated NASC representative and with representatives of the other 26 member companies and special agents, will attend the 16th Semi-Annual National Committee meeting to be held Nov. 19 and 20 at St. Louis, Mo., at the Jefferson Hotel.

## Billion Dollar Order Backlog Listed For Ten Aircraft Firms

Survey of major manufacturers discloses military and commercial schedules amount to more than \$710,000,000 on West Coast, \$417,600,000 in East; Grumman, Boeing not reported; Lockheed leads tabulation.

A survey of military and commercial backlogs of major aircraft manufacturing companies show that more than \$1,600,000,000 in orders are on hand, according to best available industry estimates. This total, of course, is subject to change and does not include Boeing, a major producer, nor Grumman, chief producer of Navy combat planes.

**Sectional Values**—Total for the West Coast, plus Lockheed, Northrop, Consolidated, Vultee, North American and Douglas, was estimated at more than \$710,000,000, while the total of the East Coast companies, Bell, Curtiss-Wright, Fairchild, Republic and United, was estimated at more than \$417,600,000.

Lockheed leads the list with current military contracts estimated at \$147,206,000, largest in the aircraft industry and with commercial contract backlog of \$85,366,000 plus another \$45,393,993 of conditional orders for the Constellation and the Stetson.

Industry sources show the following on other West Coast companies—subject to change:

**Northrop**—The company currently holds a \$91,000,000 backlog of military orders. While largely experimental, the orders include production of a new plane, still restricted, to go on the assembly line in January and replace P-61 production. Included in the firm's military production is a Northrop-Bendix gas turbine powered jet of undisclosed size and performance.

**Consolidated Vultee**—Present military backlog is around \$22,000,000. This probably will be reduced somewhat by the first of the year. The backlog represents experimental projects entirely meaning completion and expected to be before the end of the year is the company's big six-engine bomber, under construction at Fort Worth, At San Diego, the company has under construction a companion design military cargo transport. At least three still-secret experimental jet projects are under way.

**North American**—A current backlog of \$31,390,000 is available almost entirely to remaining military experimental orders. The company's military backlog a year ago stood at \$645,000,000. P-51 production will end at the close of the year and is proceeding entirely with the consumption of components previously manufactured for stockpile reserve. The company's new two-engine, two-seater fighter, now flying, is on sharply curtailed production. At least one secret plane project is well under way.

**Boeing**—The company has not reported backlog totals. Its peak backlog was in excess of \$1,500,000,000.

**Douglas**—The company expects a military backlog which stood at \$115,000,000 as of Sept. 15, to be pared to around \$50,000,000 worth of mostly experimental orders by Dec. 15.

A commercial backlog of \$228,000,000 at the close of the year has been reduced to \$101,370,000 as a result of airline C-54 design cancellations following announcement that surplus C-54's would be released to air carriers. Commercial backlog was further reduced by elimination of an order for the proposed DC-7 which

involved some \$39,000,000. Commercial backlog is strengthened, however, by new DC-6 orders and further commercial gains are expected to come from sales of the company's DC-3 pusher transport, now being offered to the airlines.

On the East Coast, following reports were made:

**United Aircraft**—In terms of dollars, for all United Aircraft, including the Kansas City engine plant, cutbacks were from an unlisted order backlog (military) on July 31, 1945, of \$800,000,000 to approximately \$120,000,000 at the present time, with deliveries scheduled through 1946 and into 1947.

**Fairchild**—Present unfilled orders consist almost wholly of development orders in each of the corporation's divisions, totaling approximately \$5,000,000 and in addition a production order for the newly designed C-42 Pocket cargo carrier, amounting to \$33,000,000.

**Republic**—Rough estimate of its backlog is \$26,000,000 including about \$33,000,000 on the Seabee amphibian, plus Bantam transport orders and some military contracts. This is subject to change pending later military determinations and does not include the conversion work Republic is doing on C-54's for the airlines.

**Curtiss-Wright**—Current backlog is approximately \$115,000,000 subject to change and depending, as do others, on Congressional appropriations.

**Bell Aircraft**—Estimate on exact current backlogs not available, but last released information showed Bell at around \$34,000,000.



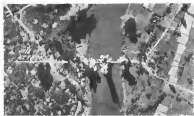
#### PILOTED AERIAL "TORPEDO":

This captured German experimental jet propelled intercoaster was launched from a vertical platform, as test consisting heretofore over Germany. Carrying one man, both pilot and explosive propulsion and were parachuted separately after firing nose-rockets. It had two minute flight period. It was deployed by the Air Technical Service Command which had it under study at Princeton Field.



#### OKINAWA TYPHOON "DESIGN":

This is not a new and radically-designed airplane. When the typhoon hit Okinawa, the winds tore this Navy Piper Cub loose from its moorings and carried it through the air until it landed on top of a Marine TANK. Ground crew members in the wind, couldn't do anything but look it down on top of the other plane until the wind abated.



**Azon Bomb in Action:** Aerial photo illustrating the deadly accuracy of radio-controlled Azon bombs, first displayed to the public recently at Wright Field, shows three of the Azons beheading out Tuscarora road bridge in Burma, while uncontrolled bombs, missed. The bridge was spanned by three large gaps left by the Azons.

## Azon Bomb Control Operation Disclosed

Operational details of the Azon radio control for bombs have been disclosed following the first showing of the bombs to the public at Wright Field during the recent "Air Fair".

The 1,000-lb. aerial bomb is steered to left or right by radio impulses which activate a servo motor connected to rudders in the bomb fins. A gyro and accelerometer, also packed in the tail, prevent the rolling of the bomb by changing the pitch of small ailerons in the fin. A radio receiver in the tail, which operates the servo motor, completes the bomb installation.

**Site Frequencies.**—In the plane, the bombardier operates a small control box with a lever which moves to left or right. The control box transmits an any of six frequencies, permitting simultaneous drops of six different bombs, each controlled by a different bombardier.

The bomb is dropped, after sighting with a bombsight. About 16 seconds after it leaves the plane a 1,000,000 candlepower flare on the tail of the Azon is automatically ignited. By following that flare with his eye the bombardier can detect left-right errors as small as five- to ten-feet at an altitude of 10,000 ft. He corrects these by pulling the control box handle left or right. A capable bombardier can operate the control successfully after 6 to 8 practice drops.



**P-30 TOW-NOSE:**

Increased usage for AAF test flights may be provided by towing them with full fuel load to combat areas. This is indicated by the Wright Field disclosure shown above; an experimental nose design for the P-30 Shooting Star with towing attachment.

## Airport Arguments Far From Finished

Passage of Lea bill still leaves final federal aid program facing Congressional conference obstacle.

Passage of the Lea bill, providing for federal aid in airport development, completes action on the second of the two such proposals [the other being the bill of Sen Pat McCarran (D-Nev.)] but still leaves far from complete Congressional work on an airport program.

Reaction of the Lea bill, with its provision that federal money can go either to states or municipalities, produces disagreement when Senate and House conferees attempt to reconcile differences between it and the McCarran proposal, which channels federal money through states.

**Report Forecast.**—Informed observers expect the conference report will recommend a set-up similar to that prescribed in the Lea bill, but that a further vote on the proposition will be necessary in both houses. In that case, it will not be unexpected if the Senate reaffirms its stand for channeling through states. That would mean further meetings of the conferees.

The report, when accepted, no matter what its form, will still be merely authorization for CAA to develop the specific federal funds on airports in conjunction with other public agencies. The program cannot begin until an appropriation is obtained. While the House Appropriations Committee generally holds an authorization as a directive, it does not always accept the amount. Some significance is seen in the fact that Rep. Clarence Cannon (D-Mo.), chairman of the House Appropriations Committee, recently condemned the Lea bill as debate.

Major differences between the Lea and McCarran bills that will have to be resolved by the conferees.

**Expenditures.**—\$75,000,000 annually for five years by the McCarran proposal; \$65,000,000 annually for 10 years by the Lea bill, with an additional \$35,000,000 to go to "forecast and post-mortem" construction projects would have to be equalled by other public money under both bills.

**Allocation of Funds.**—By McCarran, through states unless a state

has no appropriate authority, by Lea, through any public agency unless state law specifically provides to the contrary.

**Appropriation of Funds.**—By McCarran, 65 percent of funds for Class I, II and III airports, 35 percent for larger fields which must be individually approved by Congress; by Lea, 75 percent of funds to be appropriated among states according to population and area, the remaining 25 percent to be used at the discretion of the administrator of the program.

## Surplus Plant Plan Backed By NPA

Proposals that surplus aircraft plants be made available to the industry on lease based on expected revenue have been accepted by the National Planning Association in its member recommendations on an aviation industry policy.

The same idea has been put before surplus officials previously by the aircraft industry.

NPA asked for special treatment for aircraft plants "when the findings of their special characterization is stated by the armed services to be essential to national defense." Title to such plants should be retained by the armed services, NPA's aircraft industry advisory committee stated.

**Lease Key.**—General principle of financial benefit to the government should not outweigh other considerations. Specifically, the report declared, leases should be used to volume production of surplus aircraft manufacturers to carry war-built facilities during the period of reduced volume of business which will follow the war, so that they will be available for expansion in the event of an emergency.

In advocating that "industrial channels be used in the normal way" in disposal of all aeronautical material, NPA advanced the thought that while reconstruction of some items that would be temporarily impeded, there would be great long-term benefits among firms widespread distribution of "less expensive surplus material."

Although normal trade channels are being used in disposal of some aeronautical material, notably engines and components, there is reluctance at the Reconstruction Finance Corp., disposal agency for aviation surplus, to go all the way.

## Fee Suggested For NACA Work

The peacetime economy trend, which apparently will have to be backed in all program involving Federal expenditures and affecting the aviation industry, was evidenced at a House appropriations committee hearing on the first post-war revision bill.

Chairman Clarence Cannon (D-Mo.) argued that aircraft manufacturers should be required to pay for the research services of the National Advisory Committee for Aeronautics.

**Research Stand.**—Dr. J. C. Ransdell, NACA chairman, took the position that the fundamental research done by the NACA, in the past, is for the benefit of the military service, not manufacturers, and although manufacturers do benefit from the research findings of NACA, the air transport companies and the general public which purchases aircraft and travels is similarly benefited.

Dr. Ransdell points out that NACA research is directed toward advancing air transportation and improving the safety facilities.

for the traveling public. Cannon persisted, however, that "the more you are giving to the individual manufacturers who will make use of it to increase their profits."

"You would be in a better position to select your clients if you treated them all alike," Cannon told Dr. Ransdell, "and told them we are rendering service, we want to render service, and we are prepared to render service at a fair price? That would be nothing more than to render service to those who can pay, and in that way doubtless many inconsequential applications made to you might be avoided and you would then be in a position to devote all of your time and service to those who really need it."

**Public Interest.**—Dr. Ransdell replied that "for some 20 years we have tried to operate—and I believe with a fair measure of success—with the idea not to have any particular clients. We are serving the public interest."

## Insurance Rates Hold Despite Study

While studying with a great deal of interest the report on Brown plane accidents of the Office of Flying Safety of the AAF, (AVIATION NEWS, Oct. 15), leading aviation insurance underwriters generally feel that NACA's report has been too meager to afford a basis for reexamination of insurance rates.

It is pointed out in particular that in peacetime private flyers do much more flying annually than the AAF's total for all the war years, and with a lower accident rate, 2, a principal cause of AAF losses is private flying uniformly with lighter, lower-powered aircraft, while private flyers customarily do the bulk of their flying in the same general type of aircraft as which they learned.

**Rate Not Answer.**—Further, aviation underwriters believe rate adjustments are not the answer to the problem of insurance for the private flyer. Rate changes are being taken from the Official Aerial Accident Experience, they declare, emphasizing that the primary question is one of promoting safety.

Looking toward that goal, it is expected a new plan of inspection

by underwriters' representatives will be revealed soon. In addition to fostering safety education, these inspectors will accompany much the same role as plant representatives of industrial insurance companies. They would cover small airports, discuss repair and maintenance problems, the flying record, generally, while also seeking to protect the insurance company's fundamental risk.



## BOEING CAR:

Edward C. Wells, Donald J. Kaler and Norbert A. Collins, Boeing Aircraft engineers, designed this automobile. The flying car, which was taken from the Official Gazette of the U. S. Patent Office Boeing officials say they do not contemplate entering the automotive field, but provide design or portions may be sold to existing automobile manufacturers.

## SIAMESE' HEINKELS:

Revealed in this haze obscured flight photo is one of the most novel German aircraft techniques, coupled by a "Siamese" wing section forming a 1,340-hp BMW powerplant, two turn-escape Heinkels are joined to form the He-112 indicated as a glider tug. The fifth engine on the combination gives the double ship both speed and air-cooled engines for a high speed of about 297 mph. Overall length is 82-ft, 7-inch and width is 115-ft.

## Huge Soviet Clipper Still In Service

Wall of secrecy cracked as Martin's account of mammoth craft's service with Russian Navy.

The wall of secrecy which the Russians kept around the whereabouts and operation of the Soviet Clipper, largest flying boat of its type, finally has cracked with information received by its original builder, Glenn L. Martin Co., that the amphibious skyliner of 1937 is still flying after nearly eight years of service.

The craft is being used as a patrol bomber and transport by the Red Navy. The Soviet Clipper was flown from Baltimore to New York in January 1938, disassembled and put aboard a Russian freighter. Since that time the aviation industry has wondered and speculated over her fate.

◆ **Moss Planned**—It was known that officials of Aviation Trading Co., who sailed with the ship, carried blueprints and a blueprint from Glenn L. Martin to mass produce the flying boats in Russian factories. But no word came back of the Clipper participating in Russia's expanding air service.

Information reaching the Martin company from Russian sources said the Clipper made a mysterious 4,000-mile flight on a mission so secret that its nature cannot yet be revealed.

Throughout the war, Russian sources disclosed, the Soviet Clipper, stripped of her luxurious fittings, was used as a patrol bomber, a carrier for paratroops, and to evacuate the wounded after the Nazis smashed through the Crimean defenses to the Black Sea. She operated from bases on the Black and Caspian seas.

◆ **Patrol Plane**—It was understood that only the coming of the

war with Germany in 1941 prevented Russia from building an armada of the amphibians. It was reported that a big plant for the manufacture of the flying boats had been built on the Sea of Azov. The plant had been looted and production lines were in motion, with the first Russian-built clipper being readied for flight, when the Nazis overran Kiev, Kharkov and Odessa. Following their scorched earth policy, the Russians blew up the factory, together with the completed and partly completed ships.

Stripped of non-essential weight, the 4,000-mile range of the craft was vastly extended by operating from bases in the Caspian Sea. 65.5-c, below sea level, she was able to takeoff with heavier loads than the 82,000-lb. gross weight specified in design.

Prior to the construction of the Martin Navy, the Soviet Clipper was the largest flying boat ever built by the Glenn L. Martin Co. It had a span of 135-ft. as compared with the 130-ft. span of the China, Hawaiian and Philippine Clippers built for Pan American.

## Canadian Plane Sales

Forty-five aircraft and 110 engines were sold last month by Canada's War Assets Corp., government surplus disposal agency, for \$246,395, bringing total aircraft sales to \$4,357,491.

Aeronautique sales were 58 Cessna Crane twin-engine trainers, eight Anson IV twin-engine trainers, three Spartan trainers, two Fleet Finch trainers, a De Havilland Mosquito Meth. a Hurricane and a Stinson Vengeance.

◆ **Sales Expected**—Of the total 753 aircraft sold to Sept. 30, Canadians purchased 442 and sales outside Canada were 310, those outside going to the United States, Mexico and Cuba.

## SPA Advisors

Principal topics of discussion last week at the Property Administration's industry advisory committee meetings concerned release of four-engine transports and spare parts, and lease terms for aircraft and plants.

◆ **On the Air Transport Industry Advisory Committee** were: E. V. Bodenbacher, Eastern Air Lines; C. R. Smith, American; E. L. Wright, Northwest; C. E. Woodson, Delta; L. L. Harris, PCA; Robert Lee, TWA; W. C. Minter, United; S. T. Clinton, Air Transport Association; B. A. Snyder, International Association of Machinists, AFL; Ernest J. Moore, United Automobile Workers; and James E. Riden of IAWA.

Airline Mechanics department, and Ted Bilvey, chairman of the CIO reconversion committee.

◆ **At the Aircraft Industry Advisory Committee** meeting were: Morris and Schuder, E. B. Wood, of Allstate; W. T. Tilghman, sales manager of United Aircraft; James P. Murray, Boeing; L. C. Yale, Consolidated Vultee; Rudolph Wright, Curtiss-Wright; J. Carlton Ward, Jr., Fairchild; Glenn L. Martin, and Alfred Murphy, Republic Aircraft Corp.

## Devion Leaves AAF

Brig. Gen. F. Trubee Devion, assistant chief of Air Staff since 1941, and well known in aviation, is now on terminal leave prior to leaving active duty.

Gen. Devion, who was the first assistant Secretary of War for Air, is returning to his position as president of the American Museum of Natural History, but will be available to Gen. H. H. Arnold on a consultant basis.

## Canadian Fairchild Xc

Fairchild Aircraft, Ltd., Montreal, reports net profits for the year ending June 30, 1945, at \$165,032 as compared with \$38,325 last year. Operating profit was \$630,912 as against \$604,818.

◆ **Stocks**—Sales forward was \$465,000 as against \$157,960 last year. Current assets stood at \$4,424,385 and current liabilities at \$3,671,752. Working capital was \$843,535 as compared to \$475,677 last year.

## SPECIAL AIR SERVICES

CHARTER NON-SCHEDULED INTRASTATE

## 16 Months' Intrastate Operation Provides Data For Zimmerly Line

Using three Boeing transports, line reports load factor of nearly 60 percent in summer months despite sparse population of territory.

By BLAINE STURDLIFF

Operation of regular daily scheduled flights over an intrastate route of 1,000 miles since June, 1944, is providing important data for Zimmerly Airlines, and other operators and applicants in regional air transport.

Albert L. Zimmerly, president, and associates were in Washington, D. C., last week for an appointment on CAB examiner's recommendation that Empire Air Lines, organized to make the application and to take over an expanded system, be given interstate connections serving 12 communities in Oregon, Washington and Nevada.

◆ **No Mail**—As an unlicensed, intrastate carrier, Zimmerly Airlines carries no mail, considers that regulations prevent it from advertising outside Idaho or in giving the public information about connections with trunk lines.

It cannot make reservations requested from outside the state, and does not carry cargo of any kind because most of it has originated here. If the Board follows the examiner's recommendation, Empire will take over, with all these privileges.

The present intrastate Zimmerly Airlines is making scheduled daily flights totaling 1,000 miles, between Coeur d'Alene in the North via Lewiston, Boise, Twin Falls, Burley, Pocatello, to Idaho Falls in the Southeast. Boise, the largest station, has 25,000 population.

◆ **Safety Record**—A fixed base operator, Zimmerly, with his brother, started with one plane in 1934, has never had an injury to a student or passenger. From June 18 to Oct. 22, 1944, Zimmerly carried 1,237 passengers, 511,790 passenger miles on 338 flights of these, 54 flights were flown with a Travelair six-passenger, single-

engine plane with a 350-hp Wright powerplant. All other flights were with 2-passenger Cessnas.

Of 438 scheduled flights only 18 were interrupted and one canceled by weather. In addition to the scheduled flights, 110 extra services were flown. According to data filed with CAB, Zimmerly carried only passengers on this operation and had revenues with a 7-cent per mile fare of \$27,818 from June 1 to Sept. 30, 1944, an average of 16.71 cents per mile. Flying operations cost \$17,718 or 9.41 cents per mile and grossed operations were \$11,208, or 6 cents a mile, resulting in a loss of \$11,208, or 84 cent per mile.

From Oct. 22, 1944, to Nov. 5, 1944, there were 251 passengers, or an average load factor of 83.9. The company believes that many more passengers would have been carried with larger two-engine equipment.

◆ **Seat Miles**—From June 30, 1945, when the first Boeing was put on,

to Oct. 10, 1,311,250 passenger seat miles were flown with 731,358 occupied seat miles, giving a load factor of 56 percent, revenue passengers totaling 4,352. Between July 19 and October 6 the load factor was 61 percent with a total of 3,241 passengers, whose trips averaged 311.4 air miles.

In the three month period ending Sept. 30, 1945, the company derived from passenger fares, plus excess baggage charges, 26,144 cents per revenue mile. Zimmerly figures its loss for the period at \$ 855 cents per revenue mile. The present service is performed usually by two of the planes. With night maintenance, one could do the job. The third one maintains Zimmerly's equipment for his extensive base operations, and is a standby for extensions in case the certificates are granted.

The mileage charge to passengers has been 65 cents to 100 cents per mile, depending on distance traveled. Zimmerly contends the 50 and 61 percent load factors, at those rates, in his State with 82,000 square miles and only 506,649 people, proves the need for and potential earning power of the proposed services.

◆ **Believes That** "with a reasonable amount of mail pay, approximately 35 to 40 cents per mile," passenger fares can be reduced to 6 cents or less per air mile, and allow a substantial profit.

◆ **Charters** business alone by Zimmerly totaled 261 passengers in 1943 and 251 in the first nine months of 1944.

Zimmerly told the CAB that \$466,000 would be necessary to finance Empire at its inception. Of this, \$25,000 will represent organization and route development ex-



**Straight-Line Time Saver:** One of Zimmerly's Boeing 247D's passing the Sennet Dard mountains on the one hour and 23 minute run between Lewiston and Boise, over the Snake River Hell Canyon, world's deepest. The trip by train, through Oregon and Washington, takes 19 hours.



planes, \$57,596 working capital, and \$121,210 capital expenditures, including \$102,490 for planes, \$72,000 for engines, \$12,990 for personnel, and \$59,010 for ground equipment.

What shall be done about interstate service like Zammerly's is one of the difficult problems facing the Board.

►Spokesmen inside the Board admit privately that a number of unlicensed airlines operate on a "half-schedule" basis, and nothing is being done about it. The operators simply vary slightly an unpublished schedule, and let it pass for a non-scheduled operation. Zammerly is an exception; he publishes his schedule, and files it, and crosses no state line.

Zammerly's proposed interstate operation, as approved by the ex-aminers, would reach Wenatchee via Walla Walla, Washington; touch Pendleton, La Grande, Baker and other Oregon points between Walla Walla and Boise, Idaho, and extend from Boise for a connection with United at Reno, Nevada.

## Mexico Spanning Airline Reveals Sale Negotiations

Aerovias Azteca, holder of Mexican air freight and passenger route licenses, is extending the length of Mexico and Mexican franchise to fly from Mexico City to Paris via New Orleans and New York, subject to U S and French approval, may have new owners within the next few weeks.

Passenger and Los Angeles businessmen who started Azteca with two Budd Conquestors have halted operations and released most of their employees. Sales negotiations are identified by the owners.

## Airline Competition

Pacific Coast Airways has crossed non-scheduled Los Angeles-San Francisco service after about a year of operation. It has, then, three and four-passenger planes between service A and I for a time earned capacity loads of civilian unable to get on priority-crowded airlines.

Officials reduced fares to a tariff slightly higher than that of scheduled carriers, but were unable to regain business volume which they forewarn would be lost by the new priorities. The company continues on a charter basis.

## Canada Approves Charter Flying; Survey to Decide Feeder Policy

Air Transport Board, licensing both scheduled and non-scheduled services, following liberal times; expects returning veterans to get new permits.

The Canadian Air Transport Board is passing a liberal policy in approving non-scheduled air service applications, but is specifying in some individual permits that the Board "must be free to develop scheduled services with a view to public convenience and necessity without regard to whether non-scheduled licenses granted in any area."

The Board also is making clear in some permits for non-scheduled services that:

►The granting of this license gives to the applicant no right to develop any scheduled commercial air service at any precedence in obtaining a license for the operation of any scheduled commercial air service.

Public convenience and necessity has been given as the reason for the license. The Board some time ago ruled that all air services, scheduled or non-scheduled, must be licensed.

Meanwhile, applications for non-scheduled operations are increasing each month.

►Major Role—In a country which depends on the airplane for virtually all transportation in wide areas of wooded and undeveloped territory, non-scheduled aviation has attained an importance to scattered communities which will never be duplicated throughout most of the U S, where surface transportation is well developed. Density of traffic, however, will probably always be less than the potential here.

The Canadian Air Transport Board, in addition to liberal approval of new non-scheduled services, is now surveying the country preparatory to making recommendations for feederline services to open up or connect isolated areas with trunk lines.

Board officials believe returning air force veterans will apply for many of these new routes. Many discharged flyers have already sought government financial assistance in the form of re-establishment credits for launching both feeder services. Such assistance is to be granted if public need for the air routes is shown.

Recent applications and permits for non-scheduled services which can be treated typical in Canada include the following:

►Laurentian Air Services, Ltd., is permitted to continue a charter service from Ottawa, for land or seaplanes, winter and summer. This service was established in 1935.

►George Irwin, operating see Waco, is licensed to operate a non-scheduled charter service from Toronto Island Airport. He has been flying since 1938 and prior to September, 1938, had carried 5,435 passengers.

His service aids business men and tourists going to northern Ontario points off rail, bus and scheduled air services. The license was granted "having in mind the size and location of the city of Toronto" as public convenience and necessity.

►Austin Airways, Ltd., Nicholson Ont., requests a license to operate non-scheduled charter service at Nakina, Ont., to serve tourists, fur traders, fishing camps and prospectors in Northern Ontario. Austin also is licensed to operate from South Porcupine, Ont., for tourists and mining and fur workers.

►Repler Aviation, Ltd., Calgary, requests a license for a charter service out of Calgary for passengers and cargo to licensed airports within range of the aircraft to be used.

►Lawless Bros., Toronto, requests permission to make passenger and cargo charter flights from Toronto to any airport in Canada, Newfoundland, and the U S.

►Malibu Seacoast Service, Ltd., is permitted to operate from Vancouver Airport to develop its own tourist business between Vancouver and Princess Louise Island where the company operates a resort. It will also use its aircraft for charter service to salmon canneries, timber and mining centers on the coast.

►Johnseness Flying Service, Ltd., Winnipeg, requests a license for charter service from Winnipeg to any points within commercial operating range, carrying passengers and freight.

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## NPA Asks Subsidy For New Services

Planning Committee recommends U. S. aid if outlook is favorable for eventual self-support.

"Local inter-community air transportation services should be encouraged where such services appear likely to approach self-support in a reasonable length of time," the Advisory Committee on the Aircraft Industry reports to the National Planning Association. "Such encouragement might be afforded by subsidizing one or two local experimental services in each of the major areas of the country," the committee suggests. "Initial subsidies should be on a sufficient scale to insure a sound operation, but the subsidy arrangement should be subject to review."

The committee expresses the opinion that unscheduled and private flying "offer an even greater commercial potential than scheduled air transportation."

## Billion Dollar Yearly Market

Non-scheduled aviation, including private flying, will represent a billion dollar a year market, John H. Greer, Principal Pilot, Assistant to the Administrator of Civil Aeronautics, told a Detroit grouping.

Other pertinent extracts of his address:

► In 1959 there were approximately 15,000 non-scheduled operations and they flew roughly 178,000,000 miles. This represents an annual expenditure on non-scheduled flying of about \$70,000,000.

► All surveys of the post-war market for non-scheduled flying with which I am familiar indicate that the public is prepared to increase this expenditure by over a billion dollars a year. This is an increase of 8 to 10 to 1, but \$9 to 1.

► The most promising post-war activity I know of will be the "Fly Yourself" services, which will permit you to rent an airplane on one city and land it in another. There will be many pilots who will not have a previously strong desire to fly to develop solutions to satisfy this desire around an airport. But they would, at this point, carburetor their flying with trips that they would have to make anyway by some other means of transportation. Such a service would be able to secure a

In recommending short-term or experimental certificates for one or two community air transport services in each region, the committee follows the previously announced plan of the Civil Aeronautics Board, which by the end of this year probably will have granted three-year permits to a number of regional feeder airlines which will carry mail and passengers on short haul routes at a frequency of at least two round trips a day. It has been estimated that the number of such certificates will run up to eight for the country.

## Few Feederliners Sold By Canadians

Despite rumors in this country, few Beechcraft or other small transports available for charter and short-haul passenger service are available in Canada as surplus. War Assets Corp., Canadian government surplus disposal agency

high factor of utilization of its equipment and hence should be able to bring the cost of such service down to where there would not be much, if any, increase in the expense of the trip.

► Fortunately, the Civil Aeronautics Act permitted the CAB to exempt classes of air carriers from economic regulations, and all classes except scheduled air carriers are now so exempt. Also, a recent examination report to the Board recommended that private flights be permitted to contract on a service which would develop into a scheduled operation without a certificate of convenience and necessity if the operation did not conflict with the operations of a certificated carrier. If this recommendation can be and is accepted by the Board, I believe it would result in the establishment of many services which can not be established otherwise.

► We have only scratched the surface in the development of non-scheduled flying. The program made in the development of unscheduled flying in the few years of war by an all-out development program should tell us now what can be done in increasing non-scheduled flying if we possess the confidence, imagination, and the daring required to do the job.

## Airline 'Charter'

The airlines will welcome last week's report by the Civil Aeronautics Board of an economic regulation requiring certificated air carriers to obtain CAB approval before making charter flights.

Many who have expressed a desire to experiment with the charter carriage of passengers would have been free to do so.

► **None Pending**—No applications for the required approval were pending, the most recent having been that of TWA for permission to operate charter flight for the National Association of Manufacturers, which was granted.

The rounded section was 1284 of the economic regulations.

reports that the RAF Transport Command has offered it only three Spitfires, which were sold for foreign resale, because the ship cannot be located in Canada, to Spide Aircraft Ltd., Montreal, at an average price of \$3,000. Spide operates a cargo air service from Florida throughout the West Indies.

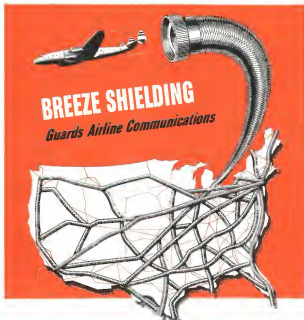
► Only two Beechcrafts have been turned over to the corporation. One was sold for \$14,500 to Chase H. Babb & Co., in the U. S. The other went to a northern Canada service for \$12,900.

## Caribbean Cargo Operation Starts

Aero Transport Corp. of Tampa has started non-scheduled and contract cargo service in the Caribbean and South American areas using six giant Strimberg Canadian built flying boats which were declared surplus by the Canadian government early this year.

The line has been operating charter cargo loads into Havana regularly for several weeks, and more recently a route to Haiti, Dominican Republic and Puerto Rico was added, according to W. B. Haggerty, president. A minimum of three charter flights a week on the Tampa-Havana run is anticipated soon.

► **Columbia Service**—Cargoes also will be carried from Colombia into Havana, and sailboats will be flown to Tampa from Cuba.



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## G-E Harnesses Jet, Propeller In New Single Powerplant Unit

Warfare project, just disclosed, opens new propulsion field; extensive preliminary testing shows gas turbine arrangement, boosting prop drive with jet thrust, allows almost unlimited power possibilities for future air planes.

A new type aircraft powerplant which, through two-way harnessing of gas turbine force, drives a propeller and boosts with jet thrust simultaneously has been developed by General Electric Co. This new G-E project, developed under wartime pressure and just now disclosed, opens a new field for civilian airplane propulsion development in the opinion of AAF and General Electric engineers. Designed primarily to drive large high-speed military transports and bombers, this Project, as G-E calls it, has been subjected to rigid test stand runs and in June of this year was installed in an experimental Army plane of advanced design.

**How It Works.**—The gas turbine with propeller is designed for installation in the wings of multi-engine aircraft or in the nose of single-engine planes. The air runs into the base of the propeller through ducts opening forward. This air is compressed by axial flow units in the forward part of the engine and then forced into combustion chambers. There, fuel is injected and burns intensely. This raises the temperature and velocity of the gases when, with

great energy, they strike the buckets of the turbine wheel. The turbine, spinning more than 10,000 times a minute at a temperature of more than 1,500 degrees Fahrenheit, absorbs the major part of the energy in the gases.

The turbine powers the compressor and through reduction gears drives the propeller. Reaction thrust created by the energy remaining in the gases passing through the turbine wheel and discharging is utilized in jet propul-

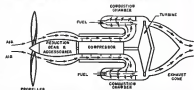
sion so that the propeller combines both propeller and jet power.

The power generated by these new units is great and G-E engineers say they see no basic difficulties in increasing the propulsive output of this type of gas turbine to almost any force visualized as necessary to drive the projected giant planes of the future.

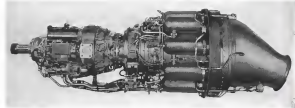
**Surface Scratched.**—Aircraft industry engineers who have studied this powerplant believe that it is the opening of an almost unexplored field. The Navy's new Ryan fighter, the Fireball (Aviation News, Oct. 1) combines jet and reciprocating powerplants which may be used separately or together. The Fireball has a Wright Cyclone radial engine in the front and a General Electric jet propulsion engine in the rear. The new powerplant developed by G-E combines both of these forces in one unit.

Advances in air power established by this new gas turbine as outlined by General Electric engineers are:

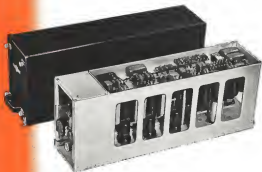
**Lighter Engines.**—This project



**New Type Aircraft Powerplant by G-E.**—A new field in propulsion developments for both military and civilian aircraft has been opened by General Electric, with a new type gas turbine which drives a propeller and boosts with jet



## COLLINS Autotune\* receiver for civilian aircraft—20 lbs.— 1/2 ATR



This new SIK-1 crystal-controlled airborne receiver is an example of the advanced design, convenience and efficiency which Collins communication equipment offers for commercial transports and long-range executive planes.

It replaces the rugged, dependable Collins Autotune system, which quickly shifts the tuning controls automatically and with extensive precision to any one of ten pre-selected frequencies at the turn of a tap switch. The frequency shift time is only two seconds maximum!

This quick, efficient re-tuning feature is a tremendous convenience—almost a must—especially in the case of planes which travel distances or use services for which

frequency shifts are necessary.

The SIK-1, completely enclosed in its case, weighs less than 20 pounds. It fits into a standard 1/2 ATR unit and can be stored in any desirable place in the plane. It is completely operated by remote control from the pilot's position. The ten Autotune frequencies can be pre-set anywhere within the receiver's range—3.4 to 16 megacycles. The power source of the receiver model is a 24 volt battery. A 12 volt model is optional.

From end to end the SIK-1 is a brilliant example of the high Collins standards of design, workmanship and performance. We urge you to investigate it fully before making receiver recommendations.

\*Trademark

**COLLINS RADIO COMPANY, Cedar Rapids, Iowa**

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In Canada, Collins equipment is sold by Collins - Fisher, Ltd., Montreal



IN RADIO COMMUNICATIONS, IT'S...



type of powerplant will make it possible for planes to be powered by smaller, lighter weight engines while carrying loads at greater range.

**Simplicity**—The propeller gas turbine is simple and compact and power is developed in a single high speed rotor, spinning many thousands of times a minute.

**Engine Vibration Zone**—This powerplant produces virtually no vibration, even when operating at maximum power.

**High Power Continuously**—The propeller gas turbine functions most efficiently and economically when producing full power continuously during long flights.

**Speed Reducing Gears**—The swiftly revolving turbine drives a propeller through speed reducing gear. Development of this reduction gear is, however, an outstanding accomplishment.

**Fuel**—The gas turbine can be developed to function efficiently on virtually any liquid fuel. Kerosene has been used for actual tests thus far.

**Range**—The range of planes powered by these powerplants will be extensive. When flying at slow speeds, at low altitudes, the gas turbine uses more fuel than a reciprocating engine would under similar conditions but, when operating at full power, the turbine uses less fuel than a conventional engine operating at maximum power. The turbine functions most efficiently at high altitudes.

**Great Speed**—The speed limits on planes powered by the new turbines are the compressibility barriers that are reached by all propeller-driven planes, somewhere above 390 miles an hour. Planes powered by the propeller units can operate over long ranges at speeds close to the wall while planes driven by reciprocating engines cruise on long flights at reduced speed.

**Compared to Pure Jet**—Planes powered by these new gas turbines may not reach the extreme high speed achieved by the Lockheed P-48 Shooting Star. On propeller-driven aircraft the propeller blades are the first part of the plane to be affected by the compressibility barrier.

Engineers realize that while this new powerplant is an accomplished fact there still is much new territory to explore in this new field of harnessing turbine power for aircraft propulsion. Outstanding aeronautical engineers, both military and civilian, are advancing

their study, and practical developments of major importance to swift and economical transportation are considered a certainty through improvements of this basic theory.

## Equipment Tests Compiled By AIA

Technical Service of the Aircraft Industries Association has just completed a "General Outline for Aircraft Equipment Testing," containing complete information on tests necessary to determine suitability of new equipment for aircraft.

The booklet, designed to facilitate the incorporation of new and revised aircraft accessories and equipment into new aircraft, is a specification, as such, but an outline of the limits and conditions of various tests through which both manufacturers and purchaser may satisfy themselves that the part will meet the actual conditions of aircraft operation.

**Industry Aid**—Whereas equipment and accessory testing has largely been conducted, through necessity, by the aircraft manufacturing industry in the past, dissemination of important data on their products may now be made by the equipment manufacturer himself and thereby facilitate its sale and use by the aircraft manufacturer.

Copies of the booklet are available from Aircraft Industries Association, 616 Shawanese Blvd., Washington 5, D. C.

## Allison Purchases Bedford Foundry

War-developed processes and techniques of aluminum casting for liquid-cooled aircraft engines will be carried into peacetime commercial production by Allison Division, General Motors Corp.

To accomplish this, the division has purchased the aluminum foundry at Bedford, Ind., which was operated during the war by Delco-Remy Division of General Motors. Enlarging upon the war-specialized use of the castings for aircraft, the firm now intends to produce units for general industrial purposes. The plant will be known as the Allison-Bedford Foundry.

**War Job**—Powered by the necessity of volume production of large, complicated, lightweight castings for the wartime engine

programs, the techniques used at Bedford produced about 14,000-000-lbs. of the units. Originally, the foundry supplied cylinder heads for liquid-cooled engines exclusively.

Pilot operations at the foundry will be underway by the end of this month, according to E. H. Newell, general manager of the Allison Division. In direct charge of all Bedford operations will be C. M. Jewett, manager of foundries. Key units of the Delco-Remy staff have also shifted to the new operation.

So that the already advanced features at Bedford may be kept up to continuously advancing standards, Allison has also announced the transfer to its management of the General Motors Ashbach Foundry, at Yellow Springs, Ohio. This plant will serve as a testing and experimental unit for Bedford. Marjory Ross will continue as manager of Ashbach.

## Brewster Dissolution Asked By Directorate

Directors of Brewster Aeronautical Corp. are asking stockholders to approve dissolution of the company which was one of the Navy's chief problem contractors during the war.

The company's assets at the close of last year were listed at \$21,121,019 against current liabilities of \$48,024,088. The Navy called its Brewster contracts last July 1. Many plant of the company is at Long Island City and, in addition, the firm leased from Defense Plant Corp. an assembly plant at Johnstown, Penna., which the government took back upon Navy contract cancellation.

## Ground Equipment Firm Formed By Lockheed

Extending its peacetime commercial operations into production of airplane ground handling equipment, in addition to its construction of aircraft, Lockheed Aircraft Corp. has announced formation of the Amusement Co. as an independent division, at Burbank, Calif.

Work to be undertaken by the new division includes design, manufacture, and overhauling of airplane ground handling equipment and service tools.

**Full Line**—Stressing the "universal" coverage of the division, Lockheed asserts it will produce

# Power plant Research UP where it Counts



This Test Equipment Gives Detailed Data

- Test coordinator pilot and co-pilot
- Volume meter measures fuel consumption of any given throttle and mixture setting.
- Flight observer at temperature instrument records one temperature reading every two seconds.
- Test lines to Wright Cyclone flowing oilway to the testbed.
- Radio-telephone key interway to show interlink.
- Flight observer interprets testbed picture of engine via electronic display.
- Panel of 15 instruments, including 6 pressure gauges and 4 valves which can be varied to give 36 different settings in inches of Hg.
- Flare lights on instrument panel.
- Photo Panel Cleaner Automatic 35 mm. camera takes simultaneous reading of 33 instruments.
- Low pressure oxygen system.

**WRIGHT**  
AIRCRAFT ENGINES

WRIGHT CYCLONE  
Wright Aeronautical Corporation • Patents, New Jersey, U. S. A.

equipment for all sizes and types of airplanes for airlines, airports, aircraft service stations, and individual private plane owners.

Heading the new company is C. P. Turner, veteran of 30 years with automobile manufacturing firms and subcontracting employees of Lockheed for the past three years. His assistant general manager and controller will be Norman J. Smith.

## Canada Revises Aircraft Programs

End of all contracts for U. S. and Great Britain force production readjustment.

Canadian aircraft plants are re-evaluating their production programs with the cancellation of all contracts for the United States and Great Britain.

The Department of Reconstruction and Supply announced at Ottawa that a contract for 70 Douglas C-54G transports for the Royal Air Force is continuing at London, Montreal, a government-owned company. Latest information from the RCAF is that the majority of these planes will be required.

**Airline Needs**—Contract at Canadian aircraft plants for 58 DC-4B aircraft for Trans-Canada Air Lines' domestic and trans-ocean routes. No announcement has been made as to whether any of the RCAF C-54s will be turned over to TCA for conversion.

Meanwhile, Ottawa announced that 23 Lancaster bombers, five Lincoln bombers, approximately 60 Mustang bombers and 17 Harvard advanced trainers are to be completed, the first two by Victory Aircraft, Toronto, the Mustangs at De Havilland Aircraft of Canada, Toronto, and the Harvards at Norwalk, Avon, Montreal.

Cancellation of the Curtiss dive bomber contract at Canadian Car & Foundry, Ltd., Port Williams, Ont., for the U. S. Navy, left 185 of these aircraft undelivered. Subcontracts for U. S. producers for components of these aircraft also were cancelled as was an order for the U. S. Army at Canadian Car & Foundry's Montreal plant.

**Subcontracts**—Subcontracts for Piper Cub and similar engines at Canadian Car & Foundry, Ltd., Port Williams, Ont., and subcontracts with Fairchild Aircraft, Montreal, for Grumman and Chance Vought aircraft were also cancelled. Rising

## September Output

Military aircraft production last month, first full month of production since V-J Day, totaled 774 aircraft of all types. Shrinkage of the industry is pointed up by the fact that in September last year the output was 7,586 airplanes of all types during a short work-day month of 26 days including a Labor Day weekend.

**Records Separated**—Total production of aircraft, engines and military, is not included currently in any one office since dissolution of the Aircraft Resources Control Office which turned its records over to the Army and Navy Aeronautical Board. A combined monthly report may be made to the board or the Commerce Department, although a decision on this has not yet been reached.

The TWA figure for last month represented scheduled production for the Army and Navy and included 271 bombers, 272 fighters, 165 transporters, 24 reconnaissance, 2 trainers, 16 communications, 10 special purpose and 6 others. A breakdown on the transports showed 38 C-54s, 39 C-56As, one C-49, 36 C-47s, four C-46s and three C-119s.

Aircraft, Vancouver, subcontracts for 13-29 components have been very materially reduced.

## Northrop Backlog Supports Planning

A pile of more than \$1,000,000 in net working capital during the fiscal year ending May 31, 1945, was reported by LaMonte T. Celsa, general manager and chairman of the board of Northrop Aircraft, who said the end of the war left Northrop with a backlog of \$45,000,000 which covers a continuation of research and development projects.

Virtually all of Northrop's contracts, except for production of the B-26 Super-Fort, were unaffected by the war's end.

The research program carried on included refinement of the company's Flying Wing design, the retractable Allison incorporated in the Black Widow and the development of the bellows system of welding aluminum and magnesium. Northrop owns basic patents on the bellows process and has arranged for nation-wide distribu-

tion of the specialized equipment under a royalty arrangement.

Northrop's net working capital as of last July 31 amounted to \$4,322,170 as compared with \$2,956,343 at the end of the previous fiscal period and \$505,840 as of July 31, 1943. The report showed that excess profits taxes amounting to \$397,733 paid by Northrop, are to be refunded by the government as overpayment and are listed as current assets.

**Sale Values**—The 1944 (fiscal) year's production, including that of the P-81, reached a sale value of \$98,513,359 as compared with the previous year's total of \$88,045,000. Net earnings after taxes amounted to \$747,501, equivalent to about \$1.85 a share on outstanding common stock. These earnings compare with \$603,519, or \$1.50 a share reported for the year ending July 31, 1944.

## C-W Propeller Division Consolidates At Caldwell

Curtis-Wright's Propeller Division has announced plans for consolidating the manufacturing facilities of its Clifton, N. J., plant with those at Caldwell.

Robert L. Karle, vice-president and general manager of the division, said that operating economies require that future propeller production be concentrated at Caldwell and that the buildings in Clifton are being returned as soon as possible to the owners, the Pacific Machinery Co., for lease to another industry.

**Wacker Rise**—The Clifton plant operations, which started in 1928, consisted of 121 persons who moved from the airplane division plant in Buffalo. By the end of the year about 500 were employed and, at the peak of production in 1943, there were 2,100 workers at the Clifton facilities.

## Edu Float Forecast

With an indicated heavy demand for metal seaplane floats, Edu Aircraft Corp. expects its production figure next year to be several times greater than its present output.

Returning to civilian production, the company has begun manufacture of its series 113B floats for lightplanes, with deliveries scheduled for the latter part of November. Meanwhile, Edu has announced its intention to appoint direct distributors for portions throughout the country.

# Peace-full

## TRANSPORT



**PARKER TROUBLE'S  
TUBE COUPLINGS  
and AN  
TUBE COUPLINGS**



**PARKER VALVES**



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# A BRIDGE TO SAFETY

takes peril out of  
nosewheel accidents



EXPERIENCE with tri-cycle landing-gear aircraft all over the world, vastly multiplied during the war years, proves that the Goodyear Dual-Seal inner tube is a "must" for nosewheel tires. Again and again the Dual-Seal has proved itself "a bridge to safety" for flight crews and crafty equipment.

This ingenious inner tube is a development of the original Goodyear LifeGuard tube for motor vehicles. The aircraft counterpart also is a two-compartment inner tube. Particularly suited to use in nosewheel tires where a failure would almost certainly cause serious damage, if not casualties, the Dual-Seal tube is protection against the hazards of the mishaps. An internal wall "bridges" over a break in the outer section.

A pressure drop in the outer compartment causes the inner chamber, still under full pressure, to expand and fill the tire. The inner wall, made of tough, two-ply cord fabric, bridges over the hole, retains the necessary air pressure to keep the tire firmly seated on its rim and provides a rolling radius for a safe landing.

## GOODYEAR STANDARD TUBES

Goodyear standard inner tubes for aircraft are the finest available. High-quality materials are processed for long wear under punishing conditions, and built to withstand the loads and stresses of fast landings and high-speed braking. That's the reason so many aircraft manufacturers specify Goodyear tubes as original equipment,

rebuilding out the Goodyear tires. Goodyear wheels and Goodyear brakes that are top favorites. For further information, please write Goodyear, Aviation Products Division, Akron 16, Ohio or Los Angeles 54, Calif.

**Manufacturers, Airline Operators, Distributors, Dealers, Private Flyers DEPEND ON GOODYEAR for—**

TUBES • TIRES • WHEELS • BRAKES • AIRCRAFT HOSE • HYDRAULIC HOSE • HYDRAULIC PACKING • GASKETS • GASKETING • LIFE RAFTS • DUCTS • CHEMICAL SHEETS • FUEL AND OIL CELLS • REINFORCED FABRIC • ENGINE MOUNTS • AIRFOAM CUSHIONING • PUZZLES • JELLYCORN • PEIROMAX • HYDRAULIC PRESS PADS • AIRCRAFT BUS-BOX PRODUCTS • HYDRAULIC PASSENGER SEATS



## HOW THE DUAL-SEAL WORKS

A and B are completely separate compartments. If in the worst two-ply road fabric inner wall which joins into section if the outer section loses its air pressure, retaining enough air in A to keep the tire firmly seated on the rim, preventing a safe landing.

# GOODYEAR

THE GREATEST NAME IN RUBBER

## AVIATION PRODUCTS

Goodyear Aviation Products Division, Akron 16, Ohio or Los Angeles 54, California  
(Product of U.S. Pat. Office) U.S. Pat. 2,100,000

## PERSONNEL

**George S. Hest** (photo), former chief of operations control, Douglas Aircraft Co., Inc., and independent industrial designer, has been appointed manager for Raymond Loewy Associates, industrial designers, in London. Contacts have been re-established with British and Swedish clients by Loewy's and Hest left this month to set up his offices in London.

**James L. Straight**, who has been in charge of committee coordination for the West Coast Aircraft War Production Council, has been appointed western division executive director of National Patent Council, a new organization of smaller manufacturers launching a nation-wide program in defense of the U. S. patent system.

**Vance C. Williams** has been named to head the new Mid-Continental Airlines post of superintendent of passenger service, to control all passenger services in use divisions. He will report directly to the vice-president, operations.

**George W. Fitch**, publisher of *American Aviation News* and *Air Transport* last week announced the appointment of **James C. Anthony** as Chicago district manager of the three publications. Mr. Anthony was formerly affiliated with *Boiler, Station, Davison & Osborne*, and was copy director of *Boeing & Co.* of Indianapolis. Previous to his appointment as Chicago manager, Mr. Anthony was sales promotion director of *Astorian*, *Astorian News* and *Air Transport* in New York.

**Paul H. Merriam** (photo), head of the electrical group, tool engineer, and chief of Glenside, N. J., has assumed new duties as head of the electrical and electronics section of the laboratory of the organization. Merriam began working with Martin 22 years ago, in the shop. Among his achievements were the Martin PBM bomber radar production installation and the Martin radio network.

**W. A. Bradfield**, who has been sales engineer in the Dallas district for The B. F. Goodrich Co., has been transferred to the new suspended products department with headquarters in Akron.

**Leo Bishop**, veteran engineering test pilot for Douglas Aircraft Co., has joined the staff of Alvin P. Adams Associates to complete a comprehensive survey of airline operational methods for clients of the Adams Organization. Bishop has been operations manager for Mid-Continental Airlines and was their chief pilot.

**J. C. Brumans** has been appointed treasurer for National Airlines. Brumans came with NAL in June, 1944, as assistant to the president.

**Maj. Morris B. Brown** (photo), has returned to Los Angeles to take over the duties of vice-president of operations for Aeroflex Transport, operating airport bus service, after serving as highway control officer in the Paris area before coming as active duty.



Brown was auditor and office manager of Aeroflex Transport. He first projected modern businessmen to keep pace with the new luxury air transport.

**Paul J. Collins** (photo), has been appointed personnel director for TACA Airways Agency, Inc., with offices in New York and Miami. Before joining TACA he was industrial relations director for General Aircraft Corp., Auburn, L. I., and Glendale.



Aerocomm, Inc., New York. Collins will be based in New York to represent the Central and South American airline.

**C. H. Brubaker**, associated with Consolidated Value Aircraft Corp. for the past five years, has been appointed chief industrial engineer at Value Field.

**Franklin D. Miller** holds the newly created position of director of sales



### INDUSTRY PLAN CHIEF:

**Maj. Howard M. Rozenheim** has been named chief, industrial planning section, Air Technical Service Command to aid in forecasting long-range industrial plans with respect to the post-war aircraft industry, disposition of government-owned plants and equipment and establishment of aircraft production. He was formerly chief of the Post-war Planning Branch of the Procurement division.

training for American Airlines, Inc. He will organize and direct a continuing program of sales training for all American Airlines sales employees.

**John D. Wough** (photo), formerly technical editor, Propeller Division, Carlisle-Wright Corp., has joined the sales department of Aerocomm, Inc., of Baltimore. Wough has just returned from a two-month tour of Germany with a government technical intelligence mission studying German aviation. His investigations were concerned with the state of development and application of all types of aircraft propellers.

**George J. Jero** has joined the British Parachute Co., Toronto, as director of sales. He has held a pilot's license for 26 years.

**Marshall B. Taft**, formerly of the Aero division, Minneapolis-Honeywell Regulator Co., has been named assistant to the president of The Brown Instrument Co., Philadelphia subsidiary. For the past three years Taft has been administrative assistant to the vice-president of Aero.

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Improved social and cultural relations inevitably result from improved business relations. Business *does* make friends.

The extension of trade and the development of new markets is a task air transportation is ideally fitted to perform. This Braniff has recognized in proposing a coordinated domestic and international system between business centers of the Western Hemisphere. Such a system will contribute substantially to the good neighborliness of the Americas, aiding full employment and prosperity among the nations served.

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Braniff Airways Inc.  
Executive Office:  
Braniff, Inc., A. A.



William H. Chesham, recently appointed district cargo supervisor for Western Air Lines in San Francisco, will assist Northern California businessmen to utilize air transportation.



Dr. Emerson Day, of Alexandria, Va., has been appointed medical director of Transcontinental & Western Air, Inc.'s Intercontinental Division. Dr. Day, who joined the staff of the Intercontinental Division on September, 1945, has assumed his new duties at Washington National Airport.

Frederick M. Payne, a member of the banking firm of Hallgarten and Co., New York, has been elected to the board of directors of Loan, Inc.

Some facilities of the  
KETHA KIBERNAT  
SALES AND EQUIPMENT CORPORATION  
Chicago Municipal Airport

J. H. Kindelberger, president of North American Aviation, Inc., left, has been elected chairman of the industry consulting committee of the National Advisory Committee for Aeronautics, which has held its first meeting. Pictured with Kindelberger are Dr. J. C. Russel, center, chairman of NACA, and Wilbur T. Piper, president of the Piper Aircraft Co.

AVIATION NEWS • October 29, 1945 AVIATION NEWS • October 29, 1945



## Air Industry Capital Balances Found Above Market Valuations

Excess profits tax bonds being many aircraft companies into higher per share bracket than indicated by reported prices.

Many aircraft companies have working capital balances well above valuations indicated by existing market quotations. Related to a per share basis, an Aviation News analysis discloses some startling contrasts in the spread between "liquid" assets and current market prices.

The Reconstruction Tax Act, placed on the statute books earlier this year, is of considerable significance to the aircraft industry and its full impact is apparently not generally recognized. This measure provides for the redemption of excess profits tax refund bonds on January 1, 1948. The aircraft industry paid very high taxes during the past few years and can now anticipate substantial refunds.

Including these excess profits tax bonds as current assets, as is now proper, the working capital picture of most aircraft companies is bolstered considerably. The ac-

companying table presents these positions to current market prices and other pertinent data. Not working capital plus excess profits tax refunds are shown for the 1944 year-end. With earnings estimated as closely approaching 1944 levels, still further improvement is indicated.

**Another Value**—It must be recognized that in addition to the working capital balances considerable equity is present in the form of other assets, which, even at forced sale prices, would prove of considerable value.

It can be seen that Bell's working capital as of Dec. 31, 1944, is 143 percent of the current market price.

Similar ratios are Martin, 129 percent; Boeing, 113 percent; Convair, 109 percent and Douglas, 105 percent.

**Market Doubts**—The explanation for these low market prices is found in the doubts raised: (1)

That all aircraft companies face a great deflation in sales and in net earnings; (2) that the exact status of their financial position may not be known until war contracts are finally settled with all interested government departments; (3) that some of these funds may be consumed as war work is liquidated and (4) that it is not known if capital distributions will be made to stockholders as "war-end" dividends or how much may be lost in ill-divided ventures designed for diversification.

**Guide**—The experiences following the first world war may provide some helpful guides. The "war-baby" companies in the previous period were, for the most part, engaged in producing for an established market. At present, the civilian market for aircraft and aircraft developments and adaptations such as radar, are undeveloped compared to their full potentialities.

It is nevertheless interesting to note that many of the war stocks of the last generation sold higher in 1918 than at any time during the 1914-1918 war period. Historically, the market has never placed a high appraisal on war earnings and feels more sure of war profits after they have been secured than while they are being accrued.

It is obvious that the total U. S. production of aircraft after World War II is not going to decline to the pre-war annual level of 1938, 400,000. The technological progress achieved under the stress of war has accelerated the commercial peacetime possibilities of the complete. But many questions remain and temper the enthusiasm of realistic investors.

What about the present world surplus of planes, engines and accessories?

**Will jet propulsion make obsolete type planes and techniques older today?** What about the atomic bomb and airplanes?

**How many planes will the world airlines need?** How many civilians will want their own planes and will they be able to buy them? These are just a few of the questions raised—there are many more.

It is these cross-currents which make any categorical conclusion almost impossible. Each company may approach its problems differently and the intelligent investor always looks to the quality of the management as a key factor in evaluating existing circumstances.

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Tools furnished by Wolab Corporation for Gloe Aircraft's "Swift" included Drill and Assembly Jigs and Fixtures and Master Gages.

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### LEADING AIRCRAFT EQUITIES

Working Capital and Market Prices  
(Per Common Share)

	Not working capital plus E.P.T. Refund (Dec. 31, 1944)	Current market Price	Ratio Work Cap to Market price	1944 earnings per Common share
Boeing (a)	\$11.75	\$12.25	96%	\$6.75
Bell	32.50	22.80	143	4.56
Boeing	30.15	26.13	115	4.98
Douglas (a)	30.75	26.75	115	3.22
Convair (a)	26.66	24.50	109	6.83
Convair-Wright	7.08	7.75	91	1.62
Douglas (b)	94.43	66.00	143	12.81
Grumman	39.87	34.38	116	9.73
Lockheed	77.98	72.00	108	4.98
Martin	37.23	29.50	126	3.44
North American (a)	11.19	12.50	90	3.44
Republic (a)	11.48	11.13	103	2.79
Republic (b)	25.03	25.13	100	5.22

Notes:

(a) After extraordinary charges and deductions

(b) After deducting all debt, all bank loans and senior equity issues.

(1) As of September 30, 1944.

(2) As of November 30, 1944.

(3) As of June 30, 1945.



## A GREAT LUBRICANT FROM A GREAT MANUFACTURER

With the advent of war, the long-experienced Mid-Continent refinery soon developed D-X AVIATION OIL and became one of the leading suppliers to the United States and Allied Nations. Today, this superior lubricant is available to commercial aircraft owners. Its characteristics include maximum resistance to carbon, sludge and lacquer formations, maximum power performance. Its coating film strength affords complete lubrication for fast-moving parts, and it performs under the widest of atmospheric temperature ranges. Suitable for large and small aircraft. Your inquiry invited.

MID-CONTINENT PETROLEUM CORPORATION

TULSA, OKLAHOMA

## PRIVATE FLYING

### Liberalized Aircraft Approval Sought By CAA Advisory Unit

Non-scheduled committee meeting also promises outline of stand against economic regulation, request for airport designation end, and private flying voice in radio planning.

By ALEXANDER McSURELY

Attacking "the critical bottleneck new existing in the approval of aircraft as airworthy," the CAA Non-scheduled Flying Advisory Committee last week asked immediate action by Administrator T. P. Wright to alleviate the situation.

The committee recommended that the administrator "immediately designate approved airports and other qualified shops to certificate aircraft for airworthiness after repair, annual inspections and otherwise."

Other actions taken by the committee at the recent Denver, Colo., meeting included:

- ▶ Naming a sub-committee headed by William Marx, Detroit, to prepare a brief outlining the committee's position opposing economic regulation of non-scheduled commercial flying for presentation during CAA oral argument.
- ▶ Recommending that the administrator continue efforts to foster state aviation regulations, which should be uniform.
- ▶ Recommending immediate abolition of requirement for CAA designation of airports.
- ▶ Approving a CAA recommendation for two points of radio channels to be set aside for use of private pilots whose planes are not equipped for full navigation and communication service, in order to give them benefit of coastal tower and communication station instructions on weather and other flight information.
- ▶ Naming a radio subcommittee headed by Harry Playford, St. Petersburg, Fla., to work with the Radio Technical Advisory Committee and the Federal Communications Commission on private flyer radio problems. The sub-committee will be the first voice the private flyer has in government

discussions on radio problems.

- ▶ Proposed Part 43 of Civil Air Regulations, which would provide safety regulation for non-scheduled air carriers, came up for detailed study with majority opposition voiced to many of the sections, while other parts were endorsed. The majority of the committee and in many cases the whole committee opposed.
- ▶ Proposed requiring a multi-engine carrier have a full-feeding

propeller installation.

- ▶ Proposed restricting single-engine aircraft from overwater operation beyond safe gliding distance, overlaid operation of single-engine airplanes beyond safe gliding distance, night or instrument flight after Dec. 31, 1947.
- ▶ Proposed requiring use of oxygen in aircraft operating at 10,000-ft. for more than 30 minutes.
- ▶ Proposed requiring two-way radio and navigation equipment for contact flight in day operation.
- ▶ Proposed requiring a direction finder for instrument flight.
- ▶ Proposed imposing flight time limitations on pilots.
- ▶ Regulations affecting "second pilots on aircraft requiring more than one pilot."
- ▶ Proposed to govern day contact flight operation prohibiting aircraft from flying less than 500-ft. from any obstacle.
- ▶ Proposed defining airport minimum areas.
- ▶ Proposed requiring the carrier to maintain an operational and maintenance manual and to revise it in accordance with the Administrator's requirements.
- ▶ Definition of the air carrier as



HAWTHORNE AERIAL VIEW:

Future commercial projects for the Hawthorne School of Aeronautics' facilities at Grapenbury, S. C., the first post-war air view of which is shown here, are being studied by Beverly Howard, Hawthorne president, following the termination of military primary flight training for American and French cadets at the school. In the four years of operation as a military flight school, Hawthorne planes flew the equivalent of 22,333,333 miles, with a total of 227,353 landings and takeoffs. Only one fatality was reported for the 233,118 hours flown in the American training programs, and two fatalities in the French programs which totaled 55,516 hours of flight.

any citizen who undertakes directly or indirectly, by lease or any other arrangement to engage in air transportation. (It was pointed out that this exceeded the limitations of the Civil Aeronautics Act and the authority of the CAB.)

Besides opposing these items, the committee recommended a number of changes, the most important being:

- ▶ Adding a clause to the requirements for "100 feet per minute (climb at 5,000-ft. above sea level) for multi-engine planes with one engine out. The clause would permit the administrator to approve previously certificated multi-engine planes not meeting this requirement, if the safety record of the plane was good. (This clause would make possible use of Cessna Bobcats now used by many airports after purchase from government surplus, which would be ruled out by this requirement otherwise.)

- ▶ Addition in the instrument flight requirement for pilots, a clause requiring at least 2 hours instrument time within the preceding 30 days.

- ▶ Recommendation that a second pilot be permitted to log all his time at the controls and at least 30 percent of his time aloft, while any additional pilots would be given credit for at least 25 percent of their time flying.

- ▶ Revision of the proposed weather minimums requirement to conform to the newly revised Part 91 of Civil Air Regulations.

In line with the committee's recommendations, a group of CAA officials in a government plane

## Appointment

Appointment of Lloyd Childs, former Curtiss-Wright chief test pilot, as secretary of the Non-scheduled Flying Advisory Committee by CAA has been disclosed. Childs is expected to take office about the first of the year, succeeding W. L. Jack Nelson, whose resignation is effective Nov. 1.

made a test on the proposed engine requirement for 10,000-ft., on the return trip from Denver to Washington. They reported that a flight of several hours at 11,000-ft. caused no noticeable discomfort to any member of the party, thus bearing out the committee's recommendation against this requirement.

## New 'A & E' Rules Urged By UPMA

United Pilots & Mechanics Association, following a survey of its members is recommending to CAA that all aircraft & engine mechanics meeting certain qualifications be authorized to make major repairs to aircraft and return them to service without inspection. It recommends further that they be permitted to make annual aircraft inspections and renew airworthiness certificates.

Qualifications prescribed include:

- ▶ Mechanics must have at least two

years experience in maintenance, repair and alteration of aircraft.

- ▶ Must have no violations against him (evidence of this requirement permitted in special cases).

- ▶ Must have been regularly engaged in business for one year prior to designation.

- ▶ Must be at least 21 years old.

- ▶ One holder of an "A" license and another holding an "E" license may function jointly under a similar arrangement if properly designated.

The recommendations followed a survey of airport managers, fixed base operators, mechanics and pilots throughout the nation, with 92.9 percent of the replies favoring such an arrangement, only 9.9 percent favoring the present inspector system, and 12 percent expressing no opinion.

The association filed its recommendations with the CAA Non-scheduled Flying Advisory Committee for reference to Administrator T. P. Wright.

## Jack Nelson Named Servair President

W. L. Jack Nelson, secretary of the Non-scheduled Flying Advisory Committee for CAA since its formation last winter, and well known in Washington government aviation work for the last six years, has resigned effective Nov. 1. He is being replaced by Servair Aviation Corp., newly formed company which will be distributor for the Erospace airplane in the District of Columbia, the state of Virginia, and the Maryland counties adjacent to the District.

J. Wayne Stewart, operator of Stewart Airport, Parkersburg, W. Va., a vice-president and treasurer of the new Servair organization, Stewart also has the Erospace distributor contract for West Virginia and part of Ohio.

Creese-Nelson has been in aviation work for the last 20 years, most of that time in the aviation insurance business in New York. He has been a leader in the campaign for liberalization of CAA and CAR restrictions on private flying, and is credited with a major part in the organization of the Non-scheduled Flying Advisory Committee.

Before the committee was formed he had served as assistant executive director of War Training Service, and earlier as director of Aircraft Priorities for the War Production Board.

## 40,000 Planes Seen 1946 Sales

Wall Street Journal predicts \$100,000,000 market by end of next year Continental leads engine group.

Delivery of 40,000 personal planes by the end of 1946 will be made by the 12 to 15 principal manufacturers of light aircraft, the Wall Street Journal predicted last week. On a basis of an average unit price of \$2,500, this indicates a \$100,000,000 market for the period.

The Journal based its estimate on tentative contracts made for engines, coupled with sales projections based on orders already received by plane makers.

Engine leaders—Continental Motors will furnish the large majority of lightplane engines, Air-cooled Motors (Franklin) is another steady factor but Lycoming, the third big pre-war lightplane engine maker—has not backed any substantial lightplane engine business so far as can be ascertained," the newspaper said.

Value of engine orders now on the books probably exceeds \$20,000,000.

Unit volume of planes in 60 to 100-hp class will be larger than that in higher-powered planes, but four volume is expected in planes up to 40-hp. Growing market is for planes in the \$1,000 to \$3,000 class, with higher speed.

## Noise Note

Latest report of engine muffling as the proper way to eliminate the lightplane's greatest nuisance value, and one of the main stumbling blocks in the field of urban landing facilities—noise—comes in a recent engineering association regarding propeller "buzzing."

With the quacking pump action, by many, as the number one point of fault in producing bad lightplane noises, some engineers have concluded with a statement laying the blame right back on the engine—specifically the propeller as the noisiest component. According to these reports the propeller due acts as a sounding board for the engine noise and proper muffling would eliminate the entire factor for all present purposes.



NEW FLIGHT PHOTO:

New flight picture of the prototype Commonwealth Tri-motor amphibian, three-place personal plane due to go into production in December at Commonwealth Aircraft, Inc., Kansas City, shows interesting details of the plywood, turn-engine craft, including clean enclosure of retractable landing gear; wing-folds, two flat Continental A-5-type engines.

more range, better instruments and equipment.

Companies—Included in the Journal's roundup were Eeco, Piper, Aeromax, Culver, Cessna, Beech, Luscombe, Tisdellcraft, Globe, Republic, Stinson, Johnson and some smaller companies.

Beech and Grumman are planning larger planes, Lockheed "intends to be a factor next year" and Fairchild's plans are not so well advanced but a line of Fairchild personal planes may be expected next year, the newspaper concluded.

## Air Advisory Board Shapes In Canada

Ontario may set up a provincial advisory board on aeronautics it was suggested at Toronto, when a meeting of the Aeronautical Association of Canada was held with Col. George Blackstock, deputy to provincial premier George Drew. Members of the advisory board are to be W. N. Deisher, Fleet Aircraft Ltd., Fort Erie, Ont.; H. A. Henshaw, Toronto; F. B. Walker, Port Credit, Ont.; and C. C. Gilbert, Toronto.

Possibility that Ontario might have control over aviation in the province, rather than the federal government, was advanced at the meeting. C. R. Patterson, general manager of the Aeronautical Association of Canada, pointed out that because of a lack of assurance

policy on civil flying by the federal government, municipalities were discouraged from developing flying field facilities, and civil flying, except on scheduled transportation, was negligible in the Dominion.

## Turner Remains NATA President

Trade group postpones convention until 1946, officers to meet in person, new policies being put in action.

National Aviation Trades Association will hold its next convention in March or April, 1946, in Chicago or some other mid-Western city, and until that time all officers and directors, including President Bease Turner, will continue in office, it was announced last week.

The announcement followed a meeting of directors and officers at Indianapolis, at which it was stated: "All rumors to the effect that President Turner will resign are false and without fact."

▶ Delay Cause—The NATA convention originally scheduled for fall or early winter of this year, has been postponed, the statement said, at the suggestion of manufacturers who are bringing out new models and formulating new sales policies which will not be ready until spring.

A new executive director, re-



SKYCYCLE AT WANAMAKERS:

Typical of the new trend toward department store sales of personal airplane is this display of the midsize, one-place Piper Skycycle at John Wanamakers' department store in New York. The Skycycle, priced at \$995, is one of three Piper models offered at the store, and is designed mostly for airport hopping and short business trips at low cost.

partially a West Coast man, is expected to take office within a few days. The present association office at Kansas City will be moved to Washington, D. C., and the new director will confer with the board of directors within the next month. He will resume publication of the NATA Dispatch, which has been suspended since the separation of Clarence Moomy, former executive director, from the association.

The board emphasized that the new appointee "would work directly under the board and carry out policies laid down by the board."

Under a new association policy adopted at the Indianapolis meeting, new membership fees will be based on class of membership, including small operator, dealer, distributor, multiple class operator and trade groups, including manufacturers, finance companies, insurance companies. This last group, formerly limited to associate membership, will hereafter be invited to participate as active voting members and to hold office. The plan also will include return of 10 percent of national dues paid to state and district groups affiliated with the national association.

## Canadian Cub Plant Begins Production

Cub Aircraft Corp., of Hamilton, Ontario, Canadian affiliate of Piper Aircraft Corp., is beginning manufacture of 3-3 tandem, two-place Cub planes, and later plans to build three-place Cub Cruisers, and the one-place Piper Skyplane. The first Canadian-built Cub has been completed.

Pre-war, the Canadian organization was almost wholly an assembly plant for parts imported from the United States factory.

**Parts Link**—Under the postwar manufacturing program, all tooling, drawings and modifications for the Canadian-built Cubs will originate in the Piper Lock Haven, Penna., plant so that parts on all Cubs, no matter where built, will be interchangeable.

Wherever it proves too expensive to turn out a small run of special parts at the Hamilton plant, these will be supplied by the Lock Haven plant.

Number of employees at the Hamilton plant has decreased from a 250 wartime peak to 190.

but it is anticipated that the number will be expanded to 350 again when full production schedules are reached.

**Four-Seaters**—In addition to the three models mentioned, the Hamilton plant is considering building a four-place plane adapted from the 125-hp. Model XL-4 military liaison plane.

The Canadian organization now has 12 Canadian Club dealers and others are being appointed.

## Cleveland Planning Huge Air Exhibition

Plans are progressing for an aircraft show in Cleveland, in January, designed to be the biggest indoor show of the kind and part of an overall program to promote Cleveland as an air hub of the nation.

Both military and civilian aircraft will form part of the exhibition. To exhibit, with aircraft engines, propellers, starters, generators and accessories.

**Profit Split**—The show, under the sponsorship of the Cleveland Aviation Club will be held Jan. 11 to Jan. 20. Leo C. Conway, president of the club, reported that already \$125,000 has been pledged by Cleveland concerns to underwrite the show. He said that from the sale of tickets and floor space it is assumed that a profit will be made which will be distributed as follows:

Army Air Forces Aid Society, 75 percent, 18 percent for the benefit and promotion of aviation in Cleveland and 18 percent to provide scholarships for promising high school graduates in colleges offering courses in aeronautical engineering.

## CERTIFICATES

### Surplus Lightplanes Get CAA Licenses

New airworthiness certificates for 45 additional lightplanes have been granted by the Civil Aeronautics Administration. These aircraft were purchased from military surplus by firms and individuals.

List of the certificate numbers, buyers, make of plane, engine, and date of manufacture follows:

NE 10126—C. W. Van Gosen, Akron, Ohio, 1934.  
NE 10127—C. W. Van Gosen, Akron, Ohio, 1934.  
NE 10128—Lansdowne Air Transport Corp., 1934.  
NE 10129—Lansdowne Air Transport Corp., 1934.

NE 10130—H. H. White, New York, 1934.  
NE 10131—H. H. White, New York, 1934.  
NE 10132—H. H. White, New York, 1934.  
NE 10133—H. H. White, New York, 1934.

NE 10134—H. H. White, New York, 1934.  
NE 10135—H. H. White, New York, 1934.  
NE 10136—H. H. White, New York, 1934.  
NE 10137—H. H. White, New York, 1934.

NE 10138—H. H. White, New York, 1934.  
NE 10139—H. H. White, New York, 1934.  
NE 10140—H. H. White, New York, 1934.  
NE 10141—H. H. White, New York, 1934.

NE 10142—H. H. White, New York, 1934.  
NE 10143—H. H. White, New York, 1934.  
NE 10144—H. H. White, New York, 1934.  
NE 10145—H. H. White, New York, 1934.

NE 10146—H. H. White, New York, 1934.  
NE 10147—H. H. White, New York, 1934.  
NE 10148—H. H. White, New York, 1934.  
NE 10149—H. H. White, New York, 1934.

NE 10150—H. H. White, New York, 1934.  
NE 10151—H. H. White, New York, 1934.  
NE 10152—H. H. White, New York, 1934.  
NE 10153—H. H. White, New York, 1934.

NE 10154—H. H. White, New York, 1934.  
NE 10155—H. H. White, New York, 1934.  
NE 10156—H. H. White, New York, 1934.  
NE 10157—H. H. White, New York, 1934.

NE 10158—H. H. White, New York, 1934.  
NE 10159—H. H. White, New York, 1934.  
NE 10160—H. H. White, New York, 1934.  
NE 10161—H. H. White, New York, 1934.

NE 10162—H. H. White, New York, 1934.  
NE 10163—H. H. White, New York, 1934.  
NE 10164—H. H. White, New York, 1934.  
NE 10165—H. H. White, New York, 1934.

NE 10166—H. H. White, New York, 1934.  
NE 10167—H. H. White, New York, 1934.  
NE 10168—H. H. White, New York, 1934.  
NE 10169—H. H. White, New York, 1934.

NE 10170—H. H. White, New York, 1934.  
NE 10171—H. H. White, New York, 1934.  
NE 10172—H. H. White, New York, 1934.  
NE 10173—H. H. White, New York, 1934.

NE 10174—H. H. White, New York, 1934.  
NE 10175—H. H. White, New York, 1934.  
NE 10176—H. H. White, New York, 1934.  
NE 10177—H. H. White, New York, 1934.

## Briefing For Private Flyers

Economy, safety and simplicity of operation of diesel engines are advantages which have caused quite a lot of lightplane manufacturers to switch to a diesel powerplant for their planes. Consequently, the newly announced Thibault 160-hp. diesel lightplane, diesel engine, purchased in the name of AVIATION NEWS, is of more than passing interest to the future of personal aviation.

**GUTBERSON STUDIES**—Gutbereson Diesel Engines Corp., for whom Fred Thibault formerly worked, made some studies on a lightplane diesel recently, but reportedly shelved it as not offering sufficient prospect of volume business. William Lind, Gutbereson research chief, made a fuel consumption analysis of projected diesel engines against gasoline aircraft engines of the same horsepower. He reported a 100-hp. diesel using 10 cents a gallon fuel could cruise 3 hours for 88 cents, with consumption of only 33 pounds of fuel per hp. hour. Two comparable 100-hp. gasoline engines showed fuel costs of \$3.86 and \$3.45 for these same cruising with fuel consumption of .35 and .36 pounds per horsepower hour. The study indicates that used in places for fairly long range flights, and not more frequent hopping, the diesel would have a definite advantage. Weight of the diesel with 3 hours fuel was quoted at 345 lbs., as compared with 485 lbs. for one of the gasoline engines and 325 for the other. Lind's projected diesel, however, weighed 275 lbs., whereas the Thibault engine weighs only 235 lbs. Thibault expects to build a six-cylinder diesel with 150-175 hp. ratings later. All parts except crankshaft, crankcase, cam shaft and fuel pump will be interchangeable with the 4-cylinder 100-125 hp. model.

**ELIMINATE OUTGASING**—George Specht, daughter of the Sprout controllable wing, thinks the exhausts from outgassing of carburetors and fuel tanks are an unsatisfactory, starting back to the outgassing of the Polymers. His Sprout wing pusher flying boat makes it possible to put the engine and most of the plane's weight down low enough in the hull so that the center of gravity remains low and no wing tip bending occurs as the plane is pushed. A previous version of the extension shaft arrangement used in planes like the Douglas X1-42 "Moose" would be needed to carry power from the "underslung" engine to the propeller, mounted high out of the spray.

**SAN DIEGO'S AEROCLUB**—Held in the "best national private grounds" of private aircraft, San Diego's Aero-Club, scheduled Nov. 10-11-12, will climax the city's Aero-Education Week presenting airshows and airshows for private planes. Window displays by local merchants, radio, outdoor, newspaper and sky advertising, military airshows are planned and a parade to the beach. The exhibit of aviation equipment in Lane Field, San Diego's main airport, is on half mile from Lindbergh Field, and exhibition planes flown to the field will be trucked to the park.

**SEATTLE FINANCE PLAN**—Seattle First National Bank has announced an aircraft financing plan available not only to private flyers but to commercial operators, lessees and airlines. The financing for privately owned planes provides for advancing two-thirds of the purchase price on new planes, and two-thirds of the replacement value on used aircraft. Loans of more than \$1,500 are not subject to government regulation "W" which requires repayment in 12 months on smaller loans. For operators and dealers, the bank will discount contracts on planes as they are sold, on much the same basis. The financing facilities are easily available to almost any flyer or operator in Washington because of the bank's branches and offices in other cities throughout the state.

—Alexander McCurdy



## LIGHTPLANE DIESEL

Simplicity of the new 160-225 hp. four-cylinder diesel engine designed by Fred Thibault for lightplanes (AVIATION NEWS Oct. 22) is shown in this test stand photo. The engine weighs 220-lb. Only two accessories off of the engine proper are the fuel injection pump, between upper members of engine mount, and the combustion starter tube, part in front of the firewall. Developed from the former Gutbereson engine's design by Stauffer Fuel Works, Bens. Calif., the diesel has 258 cubic inch displacement, in test run it delivered 127-hp. at 21,000-rpm. with 2.3 gallon per hour fuel consumption.

## New Beech Props Readied for Sale

Civilians to be able to buy controllable pitch, wood blade, lightplane units in November.

Beech Aircraft Corp., Wichita, has set November as the date of commercial sale of controllable pitch propellers with wood blades, for use on lightplanes, it was disclosed last week.

The propellers have been produced for the past two years for use on L-4 biplane planes, and have been used on various fighting troops. Until war's end, the Army took the extra Beech propeller output.

**Basic Type**—The unit offered commercially in the smallest Beech propeller made. Known as the R-900 series and licensed with CAA type certificate No. 164, it is designed for Continental A-40 and C-12 engines and any smaller engines equipped with a No. "3" taper at the end of the crankshaft flanges with flanged end crankshafts are not adaptable to this propeller.

Blades are of laminated hardwood with each laminar set at an angle to the blade's horizontal line, for stability. The propellers will be offered either with manual or electric pitch-changing.

Pitch angle of the blades is continuously variable within the operating limits of each model, and is under control of the pilot at all times.

**Crash Brake**—The manually operated pitch control utilizes a small hand crank on the instrument panel. Tests have shown it is easy to operate in any condition. A second, larger, controllable propeller, the R-300 series, for engines of 150 to 225-hp, is being developed and has already been licensed under CAA type certificate No. 307. It is expected to be ready for commercial deliveries sometime in December. Electric and constant speed controls will be available on this model.

Still other models are in design and test stages and the company expects to be able to offer a complete line of lightplane controllable propellers for engines in a range from 85 to 225-hp, in the near future.

**Performance Boost**—Performance in comparative tests, shows the R-900 type has an increased rate of climb and decrease in takeoff time of 15 to 20 percent when flown on various lightplanes in comparison with flights of the same planes using fixed pitch propellers, the company reports.

The larger R-300 propeller which is designed for engines with standard SAE 30-spline crankshafts shows even better comparative performance, when used on a Grumman Wildcat airplane in tests. The takeoff time from 500 ft. was reduced to 52.85 percent of the time required for fixed pitch propeller takeoffs, and ground run takeoff reduced the fixed pitch time by 48.5 percent.

The R-900 type, equipped with manual control weighs about 39 lbs. installed. Weight of the R-300 propellers, including electric or constant speed control, varies from 48 to 75-lbs. depending on size of blades, which are offered in diameters from 75 to 84-in.

**Conversion**—A manual-control propeller may be converted to electric or constant speed control by a simple modification making it possible for the private airplane owner to improve his propeller installation by gradual steps if he wishes.

The propeller and control may be attached to any suitable crankshaft, merely by bolting the pitch changing mechanism on the front of the engine when the propeller is fastened to the shaft. Any convenient spot which makes possible a reasonably straight drive to the pitch changing gear will serve for the control. No lubrication of the pitch-changing mechanism is necessary.

The constant speed governor which electrically actuates the electric pitch control, may be installed at the usual governor drive position on any engine, connected to the pitch control and to the cockpit control by a simple wiring harness.

**Marketing**—Beech will market the propellers principally through Beechcraft distributors and dealers, but dealers handling other types of planes which use Beech propellers as standard or optional equipment, also will be invited to sell them.

## TRANSPORT

### Potential Air Fare 'Price War' Shapes On N. Atlantic Routes

Competitive nature of new over-ocean commercial landplane services spotlighted by CAB denial of Pan Am attempt to slash New York-London fare without 30-day statutory notice.

By MERLIN MICKEL

The competitive aspect of the new commercial landplane service across the North Atlantic was outlined sharply last week by a potential price war that made itself felt even before the first ship had taken off to fly from New York to London.

Pan American Airways' apparent attempt to make itself on short notice the champion of low cost international travel was delayed by the Civil Aeronautics Board. The Board said PAA's proposal to establish a \$275 one-way fare (\$400 round trip) New York to London was less than statutory notice would "deprive interested carriers of op-

portunity to meet the competitive situation."

The denial of Pan American's request to establish the fare on less than the 30-day statutory notice came the day before the carrier was to start its first flight under the new rate schedule, and a few days before American Airlines made the first commercial flight from New York to London at the wartime fare of \$472 one way.

**FAA Battles**—Pan American countered last week by refusing to lower its rate schedule, however, and will put into effect Nov. 24 the following rates from New York to the points listed:

	One-Way	Round Trip
London (Newfoundland)	\$41	\$80.00
London (Ireland)	\$41	\$80.00
London (Ireland)	\$73	\$140.00
London (Ireland)	\$73	\$140.00
London (Ireland)	\$73	\$140.00
London (Ireland)	\$73	\$140.00

Competitive fares on American Express Airlines, overseas division of American Airlines System, from New York:

	One-Way	Round Trip
London	\$118	\$236.00
London	\$118	\$236.00
London	\$118	\$236.00

American also has filed the following schedule from Boston, a co-terminal on the North Atlantic routes:

	One-Way	Round Trip
London	\$118	\$236.00
London	\$118	\$236.00
London	\$118	\$236.00

**Warfare Rates**—Pan American will fly under wartime rates from New York until its new fares are effective, a spokesman said. Flights were to start as soon as conversion was completed on a C-54E, which the first one likely to leave New York Saturday. The company and there was no need to refile a tariff for the period until the new lowered fares go into effect, since PAA's wartime tariff has been on file with CAB for some time. Pan



WESTERN SIGNS:

Photo shows L. H. Deserrière (left), executive vice-president of Western Air Lines, agreeing with Donald H. Douglas the agreement whereby Western will receive delivery of the first commercial DC-4 after Douglas Aircraft's assembly line shifts from war to peace.

American originally asked the Board for permission to establish the lower fare on a week's notice, but the Board found an emergency situation necessitating such speed. Transcontinental & Western Air, as the third operator certificated across the North Atlantic by CAB, has made no announcement on its own fare plans. Its first commercial flight on the route probably will not be made until the end of November.

**TWA Advantage**—Pan American and American Express have been using flying boats across the North Atlantic during the war, but TWA, as its position as a new carrier in this area, will be able to file fare schedules on a day's notice, a privilege that will give it the competitive advantage that Pan American sought and was denied.

TWA explains that it is doing extensive conversion on the C-54E's allocated to it for the operation. Pan American was to have inaugurated landplane service in London Oct. 26—three days before American's first flight.

Since CAB has virtually no jurisdiction over air fares between the states and foreign countries, although it requested it from Congress in its annual report for 1942, issued in January, 1943, the low Pan American fares may be established without further action.

PAA is confident it can operate economically at the lowered rate, especially if expected increases in frequency are allowed. It anticipates State Department allocation of six additional round trips a week across the North Atlantic, which it hopes to be granted three, the others going to AA and TWA.



New Beech Lightplane Propeller. Schematic drawings of the new Beech controllable propeller announced for lightplanes, show, above left, a cutaway view of the complete control mechanism, above right, how wood blades are set at proper pitch in the

propeller hub assembly. A protractor is used to set proper blade angle then bolts within the hub are tightened and secured with safety wire. Center: A Beech R-900 controllable prop is shown installed on a Stearman Voyager 194.

# Wartime Navigation Network Sought For Peace Utilization

Conference Chairman, Dr. Warner, terms global facilities "priceless resource," warns against loss of time in moving toward their preservation; disposal of installations already under discussion in many capitals.

The Air Navigation Committee and technical sub-committee of the Permanent International Civil Aviation Organization in Montreal are now considering the role PICAO may assume in one of the most important problems facing world air transport as plans for unprecedented expansion begin to materialize.

Difficultly in the future of the elaborate network of air navigation facilities established for military flying during the war—whether these facilities are to be dismantled or the military transport commands are demobilized or whether arrangements can be made for their continued operation for civil flying.

**Four Answers**—At a recent press conference, Dr. Edward Warner, president of PICAO's Interim Council, divided the question in two parts and suggested four alternative solutions to the first.

Primarily concerned with the meteorological and communications facilities and search and rescue organizations established for the vast amount of military flying during the past five years.

Priority was first to ensure the maintenance and staffing of individual units and, second, to coordinate their operation, said Dr. Warner. To keep the stations running, he suggested as alternative possibilities:

► The government of the area where a particular establishment was located might lease over and continue operation.

► If the financial burden was too heavy for the nation whose air force operated the station during the war, might arrange directly with that government to give financial aid.

► Separate regional international agreements might be formed of those states whose airlines used the facilities in question.

► PICAO might serve as the coordinating and organizational

agency for the formation of such regional organizations.

There is "too little waste," Dr. Warner emphasized. While military air transport currently consumes at a high rate, the next few months will see a substantial reduction and consequent disbanding of ground organization.

Disposal of these facilities is under discussion in the various capitals, he said, and it was possible that the desired end might be achieved entirely through bilateral negotiation, but PICAO should be prepared to step in.

► **Standardization**—In the distribution of information supplied by these establishments and coordination of their action, purely technical action was impossible, Dr. Warner believed. Some sort of regional organization and standardization would be necessary.

One government might be chosen to operate the system in a given region, or the job might be rotated among the states concerned. Here again PICAO might serve as the medium.

Whatever the methods adopted, however, "post-war air routes are negotiable and agreement on the means of maintaining wartime facilities demand immediate attention from someone if the disruption of a priceless resource is to be avoided," said Dr. Warner.

## Trans-Canada Gets Yukon-Alaska Route

The Civil Aeronautics Board, with Presidential approval, recently issued Trans-Canada Air Lines a foreign air carrier permit to operate between Whitehorse, Yukon Territory, and Fairbanks, Alaska.

Aerial operation of the route, on the basis of one schedule daily except Sundays, using Lockheed Lodestars, will be conducted temporarily by Yukon Southern Air

Transport, Ltd., a wholly-owned subsidiary of Canadian Pacific Railway Co.

► **Subcontract Need**—The Canadian government has sanctioned this subcontract arrangement for ten years, thereby creating TCA's establishment of a new base at Whitehorse and operation of an integrated route.

The board found that its approval "would be a matter of convenience to the government of Canada and to Trans-Canada in permitting expeditious inauguration of the service as well as in furtherance of the cooperative relationship existing between this country and Canada."

CAB Member Josh Lee, in a separate opinion, concurred in issuing the permit to TCA, but objected to operation of the route by Yukon Southern on the ground that "whereas it is assumed that Trans-Canada intends to operate this route sometime in the future" and "the record leaves considerable doubt as to whether Yukon Southern is substantially owned and controlled by Canadian citizens."

► **Precedent**—The foreign air carrier permit is issued pursuant to an agreement of Feb. 19 (Aviation News, Feb. 24), between the U. S. and Canada, providing operation of the route by one carrier of each nation.

## Norwegian Airlines To Become Private

Norwegian Air Transport, the interim administrative organization created by the Norwegian government to operate civil airlines during the reconstruction period, will be supplanted by a private company in which the government will have only a small stock interest, if the trend of present thinking is followed.

At this time, it appears that there will be only one major Norwegian airline. Some of the essential air services in the country are expected to be unprofitable—such as the run up the sparsely-settled Atlantic coast—and would require a subsidy. Pre-war airline operations, as well as shipping companies, would be invited to participate in the ownership of the new airline.

► **Operation**—This development, however, is not believed to be very far off. NACT is operating three converted C-53's and seven unconverted C-47's over routes to England, Copenhagen, Stockholm and in Norway.

## Pacific 'Objections' Ready For Hearing

Bound to hear varied protests against examiners' recommendations in case, Seattle, in Olympic gateway, among major issues.

Numerous protests to examiners' recommendation in the Pacific case were in the hands of the Civil Aeronautics Board last week as it prepared to hear oral arguments on the case today (Oct. 29).

Protests took various exceptions to the proposals of Examiners Hans L. Newman and Lawrence J. Koster (Aviation News, Sept. 3) that Northwest Airlines be given a route from New York and Chicago across the North Pacific to the Philippines, that Pan American Airways be permitted to extend its routes in the Central and South Pacific, that Alaska Airlines be allowed to fly between Anchorage and Seattle via intermediate points, and that Western Air Lines be permitted to extend its route from Lethbridge to Edmonton, Canada.

► **WAL Request**—Western asks that it be certificated to provide service to Alaska via Seattle and Great Falls, maintaining that the public interest would not be served should Western be forbidden to fly beyond Edmonton on its proposed route north via Seattle to Seattle in Alaska Airlines' favor.

WALA's brief predicted enough traffic via Great Falls to justify

competition between Northwest and Western, maintained that the latter had demonstrated an ability to provide the type of competition required by the public interest, and argued that other regional air carriers in Alaska would be "stifled" if Alaska Airlines received "unusual access" to U. S. traffic by the proposed extension into Seattle.

The failure of the examiners to grant Seattle as a direct gateway to the Orient was attacked. At many of the briefs it is undoubtedly will be in the oral argument. Peris, cities and chambers of commerce of Seattle and Tacoma and the Washington state advisory commission are among the interveners who objected to the extension. Northwest objected that it was not included as part of its North Pacific route.

► **Vertical Routes**—Alaska Airlines, on the other hand, thinks the examiners should have recommended it for U. S.-Alaska service from Chicago. It also objects to the recommended inclusion of Anchorage as an intermediate point on PAA's route between Bureau and Fairbanks, and consolidation of Pan American's three certificates authorizing service between Seattle and Fairbanks.

Four interesting Alaska Airlines objections in a short burst to the proposed extension of Alaska Airlines to compete with Pan American, on the grounds that volume of business would not support the competition, which they contended would be provided at the expense of 33 smaller car-

riers without benefit of mail pay.

But American claims the examiners erred in proposing competition across the Pacific, and said the point-to-point routes recommended were not in keeping with the area concept of international routes expounded by the Board in the North Atlantic case. PAA noted that all applications in the Pacific case, except its own, be denied. United Air Lines, none of whose application the examiners favored, took exception to recommendations for Alaska and Western airlines. U. S. Airlines, proposing use of lighter-than-air craft across the Pacific, also took exception to the report on the grounds that the proposed operations for which they seek approval are not subject to the same rules as those using heavier-than-air equipment.

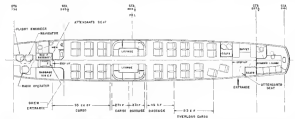
► **Public concern's objections** were aimed mostly at the examiners' findings in regard to service in Alaska.

## Pittsburgh Port Plans Call For 1,500 Acres

Revision and expansion of plans to provide Pittsburgh with a 1,500-acre airport nearly three times as large as New York's La Guardia Field have been announced by Allegheny County officials.

Cost of the project has been increased from \$19,000,000 to \$23,000,000 and will be financed by bond issues.

Attempts probably will be made to have Pittsburgh established as a port of entry for incoming overseas flights.



"RAINBOW" ARRANGEMENT:

Plan of the seating arrangement of the high-speed, high-altitude Rainbow transport projected by the Re-

public Aircraft Corp., a number of which have been assessed to be on order by Pan American Airways



## Avco Seen Ready To Sell AA Stock

Investment firm maintains it does not hold "adverse" control of airline in final CAB action looms.

Aviation Corp. appears ready to comply with a possible final Civil Aeronautics Board order for divestiture of control of American Airlines, although AVCO denies that such control exists.

Answering the board's recent show-cause order (Aviation News, Oct. 15), Avco alleged that its ownership of 227,438 shares of AA stock "has not in the past and would not in the future be adverse to the public interest."

► **Vote Reduction**—If CAB makes final its tentative conclusion to the contrary, Avco said it would reduce its voting stock in AA to not more than 5 percent of such stock outstanding and file monthly reports, through August 1968, on amount of stock disposed of and sold to the public.

CAB's findings and conclusions, the answer said, are in accord with the evidence "except insofar as they may imply Avco has exercised, or will in the future exercise, any control over American Airlines," either directly or indirectly. Avco denied that its stock holdings in AA would deprive either American or its subsidiary, American Express Airlines, now American Airlines Overseas of "proper and necessary freedom of judgment in the selection, purchase and use of aircraft and equipment."

## Pacific Air Pipeline Sets Cargo Pattern

The Army and Navy were ready with a plan to solve the huge pipeline problem on the Pacific theater, major air transport was concentrated, when the war, and the pipeline need, ended.

The plane has been drawn up and studied and in event of future wars the experience and planning should be of great value. They might also be of prime importance to trans-ocean freight service in the years immediately ahead.

► **Problem**—It took approximately four months for aircraft equipment sent from the West Coast to the army for use in the Philippines. That meant that eight of any ordinary stock shipped in



**HARDIN TO TACA:** Frank O. Harkin of TACA, Texas, has joined TACA Airways as executive vice president, with headquarters in New York. With more than 25 years aviation experience, since with American Airlines, General Harkin had been considered as a successor to Edward P. Warner on the Civil Aeronautics Board. He has 12,000 flying hours, and was a charter member of the Air Line Pilots Association. He was with the Air Transport Command three and a half years and served with the 121st Air Squadron overseas in World War II.

needed to keep the pipeline filled so that two of the item could be sent to each month. This period times items became available and critical demands developed for spares for the newer types of planes.

When war was over it was to use transport to carry all airborne type spare parts and assembly for combat aircraft by ATC and NATS. Such air transport would reduce the amount of material in the Pacific pipelines by as much as 80 percent and would have made the latest equipment available weeks ahead of surface transport.

The air transport plan would have required but two of the items in the pipelines in order to deliver one a month.

## London Air Aide

State Department's newest appointee in the civil aviation field is a new assistant civil air attaché to London, Carson Crocker Crocker is the only assistant attaché to be named to date. He will aid Livingston Balthartwater,

## Pilot Landing Attempt Cited In AA Accident

Pilot's attempt to use standard "missed-approach" procedure, beyond the point where it could be safely applied, was the probable cause of an accident in which an American Airlines' DC-3 crashed near Burbank, Calif., Jan. 10, a Civil Aeronautics Board scientist report stated recently.

The Board also cited the company's negligence in failing to provide weather information to the pilot, thereby placing him "in a disadvantageous position."

► **Missed Field**—Twenty-one passengers—all service men—and the crew of three were killed. The plane was headed for an alternate field after abandoning an effort to land at Burbank in below minimum weather conditions.

## ATC Flight Totals List Plane Records

Statistics provided by the Air Transport Command in response to an Aviation News request for data on ATC's transport operations show that from March, 1944, through June, 1945, inclusive, four general types of airplane flew 3,731,394 hours, 349,054,732 plane miles, 4,160,375,180 passenger miles, and 1,300,323,385 ton miles for the command.

These record-breaking totals were run up by the Douglas C-54 Sky-master and military versions of the DC-3, the Consolidated C-47 transport Liberator, and the Curtiss C-46. The DC-3 types and the C-46 are twin-engine planes, the others four-engine. For each type, the figures were:

► **C-54**—Hours flown, 666,453; plane miles, 161,869,877; passenger miles, 2,001,193,540; ton miles, 558,006,232; average load, 3.4 tons; load factor, 70 percent.

► **C-47**—Hours flown, 441,087; plane miles, 177,497,119; passenger miles, 260,543,344; ton miles, 280,530,483; average load, 2.6 tons; load factor, 68 percent.

► **C-46**—Hours flown, 499,518; plane miles, 164,289,364; passenger miles, 332,364,853; ton miles, 454,190,447; average load, 2.3 tons; load factor, 69 percent.

► **DC-3**—Hours flown, 929,279; plane miles, 138,555,722; passenger miles, 1,694,956,332; ton miles, 244,848,166; average load, 1.6 tons; load factor, 72 percent.

## Airport Planning Rises On 'Coast'

California municipalities with development and expansion plans; other states quick to seek air travel facilities.

Cities and counties on the West Coast are accelerating plans for airport development and expansion.

San Diego County, Calif., is preparing for adoption of Civil Aeronautics Administration's proposals for 16 new airfields, two of which are in San Diego City and expected to cost about \$1,200,000. The eight county landing strips are estimated at \$600,000. The San Diego City Council plans early construction of a \$200,000 administrative building at Longfellow Field.

► **Kern Plan**—Also in California, the Kern County Planning Commission has completed a master airport plan as a guide for municipalities in the present study of airports to 43. Four of these will be community airfields adjacent to the city of Bakersfield.

City engineer Walter Hopkins of Bakersfield, Calif., presented to city officials CAA's airport plan as a guide for extension of runways on the city's municipal airport from the present 1,200-ft. to between 2,700 and 3,700-ft. at an estimated cost of \$14,900.

► **Washington**—In the State of Washington, Tacoma officials were aroused by start of work on a private field owned by a newly created firm, Tacoma Airport, Inc. Location for this new 2,500-ft. runway is on a site recommended by the CAA as most satisfactory for development in the area.

Now, a city commission is being formed to study aviation needs. At present no airport near Tacoma can accommodate commercial facilities because existing facilities fail to meet CAA requirements.

► **Utah**—In Ogden, Utah, city engineers, Wm. Engelhardt, has been requested by the city commission to prepare plans and cost estimates on an administration building for Mackay airport.

► **Reise**—Construction of hangars and siting of a 3,000-ft. flight strip are being planned near Boise, Idaho's sixth airport, Walter Duffnre, president of the newly formed Airfield Service Co., owner of the field, announced flying operations should start about the

## Ten Lines List Service Changes

Several service changes, both domestic and international, have been reported to Civil Aeronautics Board recently by the airlines. Some have occurred; others are for the future. Among them are:

► **American Airlines**—On Nov. 1, will add one round trip daily between New York and Toronto on AA 6 and AA 60 and vice versa; New York and Los Angeles on the same days will add two round trips, AA 10 and AA 100, between New York and Los Angeles, and AA 10 and AA 100 between New York and Washington on AA 10 and AA 100. On Nov. 1, will add one round trip daily between New York and Los Angeles on AA 10 and AA 100.

► **Northwest Airlines**—On Nov. 1, will add one round trip daily between New York and Los Angeles on NW 1 and NW 2, and one round trip daily between New York and Los Angeles on NW 1 and NW 2. On Nov. 1, will add one round trip daily between New York and Los Angeles on NW 1 and NW 2.

► **United Air Lines**—On Nov. 1, will add one round trip daily between New York and Chicago on UA 1 and UA 2, and one round trip daily between New York and Chicago on UA 1 and UA 2. On Nov. 1, will add one round trip daily between New York and Chicago on UA 1 and UA 2.

► **Western Air Lines**—On Nov. 1, will add one round trip daily between Los Angeles and San Francisco on WA 1 and WA 2, and one round trip daily between Los Angeles and San Francisco on WA 1 and WA 2.

► **Alaska Airlines**—On Nov. 1, will add one round trip daily between Seattle and Anchorage on AL 1 and AL 2, and one round trip daily between Seattle and Anchorage on AL 1 and AL 2.

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PAN AM LEASES BASE SITE:

Pan American Airways has leased 50 acres at the San Francisco Municipal Airport for its new Pacific and trans-Pacific operations. The lease will run for 30 years, with a renewal option. Shown at signing ceremony are, left to right, B. M. Dohm, manager of the airport, Fred Adams, PAA attorney, L. E. Reynolds, manager of PAA's Pacific-Alaska Division, Roger Lippman, mayor of San Francisco, and James H. Turner, manager of Utilities. The line expects to build new hangars and other facilities.









C. G. ("Killy") Killingsworth, Southwest Airmotive Line Service Manager, is widely known among fliers for his friendly, efficient service.



## SERVING THE SOUTHWEST

**U**NDER the able operation of Southwest Airmotive, Love Field Municipal Airport at Dallas has become one of the Southwest's great service centers — and plans for its expansion are already in the making.

Famed for its training of World War I pilots, Love Field has served in World War II as one of America's largest modification centers. In addition, the field is one of the main stops on transcontinental flights. Southwest Airmotive not only services planes for airlines, but has won a nation-wide reputation for its splendid facilities and friendly, efficient servicing of private and commercial planes.

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just as they are with other progressive airports all over the country, and with leading airlines. In fact —

*More revenue airline miles in the U.S. are flown with Texaco than with any other brand.*

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Wherever you are located, a Texaco aviation representative will gladly help you pick the right lubricants and fuel for your needs, and can often suggest improvements in maintenance practices. Texaco Aviation Products are available through more than 2300 Texaco distributing plants in the 48 States. The Texas Company, *Aviation Division*, 135 East 42nd Street, New York 17, N. Y.

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1. Ordnance Specification P.S. 300-4 contains official instructions for the complete processing of Government-owned production equipment.
2. These instructions require that only rustproofing materials meeting Government specifications be used.
3. Texaco rustproofing products meet Ordnance specifications for application on Government-owned equipment.
4. For full information, see your Texaco representative or write to us.



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FOR THE AVIATION INDUSTRY

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